Safer Methods in Mine Haulage Described on Page 209 et seq.

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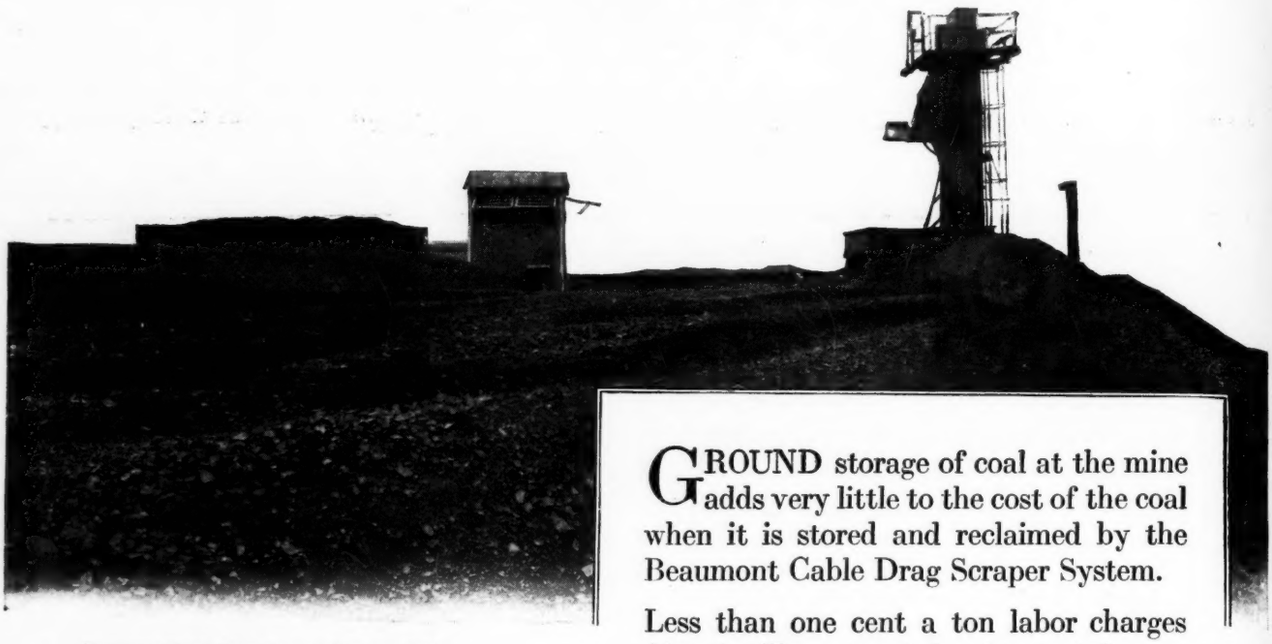

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COAL AGE

The Only National Paper Devoted to Coal Mining and Coal Marketing

C. E. LESHER, *Editor*

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Spragging the Wheels of Justice

STOPPING the Herrin appropriation in the Illinois Legislature was a forlorn hope, but the United Mine Workers' officials in that state attempted it anyway. Flushed with their success thus far in thwarting justice in the Herrin massacre case, and therefore caring less than ever what honest citizens think of them and their organization, they demanded that no appropriation be made. This, of course, would not have halted the prosecution. Ample private funds from business men and citizens of all degrees throughout the state are at the disposal of the Attorney General.

The only hope the miners could have had was merely to hamper the prosecution with riders to the appropriation bill. They would have compelled Attorney General Brundage to declare what he was going to do with every dollar of the $75,000. Would they reveal what they are doing with every dollar of their own $250,000 fund? And they would have required the state to prosecute for murder W. J. Lester, the foolish operator who imported armed guards for his Herrin strip mine. Yet since the very day of the massacre—June 22, 1922—they have done everything in their power to prevent all operation whatsoever of the machinery of justice. They want no more prosecution of that case or any phase of it. Such action is dangerous. What they want for the Herrin massacre is oblivion.

Why Russian Methods?

HOW much does Ellis Searles know about coal mining? But then how much does Heber Blankenhorn?

Mr. Blankenhorn, associated with the Bureau of Industrial Research of New York, is credited with a large responsibility for the "How to Run Coal" pamphlet, recently issued, being the report of the Nationalization Research Committee of the United Mine Workers, signed by John Brophy, C. J. Golden and William Mitch, all true-hearted and honest-to-goodness coal miners.

This nationalization plan, however, seems to have fallen from grace in quarters where it might have occupied high place. It got away to good publicity on the second try and was quite generally scored by the press. It developed no popularity. The cheers in fact were confined to Greenwich Village and those crabbed individuals who derive selfish pleasure in baiting business. The country wants to know more about the controversial points on coal before it jumps to nationalization. This sentiment the officers of the United Mine Workers sense. They privately and publicly concede that those who urge a policy of governmental ownership and operation of coal mines are several generations ahead of the times. Hence why bring down on their heads unnecessary public condemnation for a program that is not now practical; hence their implied repudiation this week of the nationalization program of Mr. Brophy and Mr. Blankenhorn.

The United Mine Workers is taking pains to inform the country that it is not "red," not even faintly tinged with pink. Well and good. It is no discredit to the miners' union that some of its members are so rosily minded. We know people holding "white-collar" jobs, ex-bankers who, having accumulated their pile, can indulge themselves in euphonious declamations of highly altruistic sentiments and others less rich in dollars whose thinking is simply twisted, who are as "liberal" in their thinking, talking and writing as those who wrote and signed "How to Run Coal."

The United Mine Workers has demonstrated it can get what it wants for its members by application of the American method, so why try the Russian?

Central Competitive Field Re-established

ASIDE from the fact that the settlement between the union and the soft-coal operators at New York last week insures peace for the next year, the agreement is chiefly interesting as demonstrating the supremacy of the old school of wage negotiation. For more than a year there has been developing a movement to broaden the scope of the negotiations with the United Mine Workers. From the time that the Central Competitive Field was originated, in the late 90's, until 1917 the machinery was simply and fairly effective. Operators from four states, western Pennsylvania, Ohio, Indiana and Illinois, met with the miners' union once every two years. These operator groups had no prior conferences, no agreed program, no common policy. They just came together at the call of the United Mine Workers to negotiate a wage agreement and contract for the ensuing two-year period.

Thus has the old school worked. Thus was the stronghold of the United Mine Workers strengthened. Other coal fields outside the Central Competitive were organized and their wage levels changed in consonance with the central field, but always as a consequence thereof and never independently. So long as wage changes were small this caused no pronounced hardships. It was only when the upward march of wages, beginning in 1917, reached its climax in 1920 that the thin coal areas in and outside the old central field felt the pinch.

The desire of the "outliers" to share in the councils of the old central field is not new. It was strongly manifested and strenuously denied in 1919. It was debated and discarded in the conferences that began in October and ended in New York last week. The past year has been remarkable in that it witnessed the withdrawal of Pittsburgh, one of the old group, with a deliberate policy of aloofness, "of splendid isolation," on the

one hand, and on the other the effort to bring all operators in organized fields into one group in the matter of wage-making policy.

Such an opportunity for a shift in the organization dealing with the miners as was presented by the settlement of 1922 may not come again in many years. The old central field was for the time removed from the stage; all were on an equal footing, every group had signed individually with the union. When, during the meeting in Chicago the first week of January, the effort was made to turn the conference, in which each of the fifteen wage districts of the country was represented, into a scale-making body and the effort lost by the margin of a few votes, the opportunity was lost—the only thing gained from the wreck of the strike of 1922 was thrown away. If the operators from all the organized fields of the country could not get together to discuss wages, then the return to the old Central Competitive Field conference was natural and to have been expected.

The New York agreement of this year reinstated the Central Competitive Field as a basic wage-making body. That there were but three states in the conference had no more effect on this fact than that there were but three in 1906, when Illinois withdrew, for a time. Furthermore, these present three appear to have put themselves in the way of returning at the expiration of the new agreement for the purpose of making the next scale. The old processes have been re-established. With a wage program laid out in advance by the Coal Commission, from which there is no deviation as a result of the New York conference, it would have been as simple for each district to sign alone or for all to join.

The old school triumphed, Pittsburgh, invited to join but refusing, maintains an independence that for another year at least has but limited value. The lone hand in this game is the hardest to play. The outliers, refused admittance, must await another opportunity, meanwhile developing and promoting the idea of better organization among the soft-coal operators in wage making.

Better Track

LITTLE has been written as to better track, but the subject is one that will bear much consideration. Time was when mine traffic was so light and trips ran so slowly that the track was not destroyed by use. That distressing function was left to time and to the corrosion of mine water. With our mine roads as with our highroads, weight and speed are replacing natural forces as the chief destructive elements. While not neglecting to correct the heaving of the bottom, its softening by moisture, the displacement of track by side movement of the clay, the destruction of rail by corroding waters and electrolysis we must not fail also to remember that if we are going to use equipment but little lighter and but little less speedy than that on railroads we must introduce railroad methods.

Unfortunately, operators can make switches and frogs in their own shops and the argument that they can be made in the spare time of men normally engaged in other work favors that practice, but it is questionable whether it is well and safe to rely on such labor for work so important. After all "quantity production lessens costs" and experience in trackwork such as manufacturers have acquired and experiments such as they have made do much to improve the quality of their work. The use of large and adequate forging, cutting and machining equipment and the division of labor practicable in a large shop reduce the labor cost and make the product better. Then again, the equipment is not only better constructed but made of more durable material. So, after all, the manufacturer usually has the better of the argument.

The saving on a home-made switch may be purely illusory, for a single wreck may wipe out the saving on several switches and the force in the blacksmith shop would be reduced if cars were not derailed. It is true that when the men who repair cars are not busy they can manufacture track, but how much better it would be not to have to repair cars so often! If this repair work were reduced it would be possible to reduce the shop force, and no time would be lost. What time is saved by making poor switches is lost by repairing the wrecks which these switches cause.

The Human Element in Car Rating

UNIVERSAL and uniform car-rating rules for coal mines are doomed. After some five years of experience under "C S 31," the rules set by the U. S. Railroad Administration in 1918 applicable to all roads and all bituminous coal mines, the decision has practically been reached to revert to the old practice of rules for each road. Hearings lasting for several weeks were held before the Interstate Commerce Commission late last year in an effort to revise the rules, for C S 31 had been found unsatisfactory both to the railroad and the coal operators. Based on the theory of distributing the available cars during a shortage among the mines in such wise as to give all equal running time, these rules operated to increase the ratings during times of shortage and decrease them during times of surplus. The inflation has been and is increasing, having reached a point where, according to the ratings, the mines have capacity to produce more than 20,000,000 tons per week, an absurd figure.

Under the leadership of the National Coal Association, the operators undertook to revise these war-time rules and yet to preserve their uniformity. After the hearings before the commission were concluded and the matter was referred to the parties at interest for adjustment, the operators abandoned that position and agreed with the railroads in asking the commission for permission to work out rules locally, having set up certain general principles. These principles are found in the rules now in effect, and interject nothing new.

It is clear enough that what is wrong with C S 31 is that there is no policing of its application. The rating for a mine is based solely on the statement of the operator. The apparently simple facts on which he reports are not always easy of ascertainment and are most difficult to check. Wholesale inflation of ratings has resulted. After struggling for months in an effort to devise rules that would work, the effort is abandoned and the industry is about to revert to the old system of letting the railroads rate the mines and check their results.

Putting the matter in another way, it has been found, after some five years' experience, that it is not possible to rate coal mines by rule and formula. It is essential to introduce the human element of judgment, and since the coal operator is the most interested person in his own rating, he is the least competent to rate his mine. The railroad inspector has no interest as between mines save to see that all are treated fairly and uniformly.

Safer and More Economical Methods in Mine Haulage

One-third of All Haulage Fatalities Caused by Wrecks—Use Clamps Not Bolts, to Hold Guard Rails in Place—When to Retrack Development Haulageways—Mistakes in Turnouts That Cause Accidents

By Alphonse F. Brosky*
Pittsburgh, Pa.

SOME years ago an engineer made a computation of the number of cars derailed in the mine at which he was located, and after he had divided that figure by the number of locomotive trips in main or gathering movements—whether made with loads or empties or merely running light—he found that about one car was derailed for every trip made.

He reported this fact to the main executives of the company, adding that if means were taken to repair the then badly laid track and to maintain it in condition after it had been repaired these derailments could be averted. The officials to whom he sent the report were both chagrined and indignant that such a "cub" should have the audacity to tell them how they ought to manage the mine. Both mine superintendents and foreman were as one in scorning the suggestions offered.

Here was an opportunity offered a company to lessen the risk of haulage to which its employees were exposed and at the same time lower its haulage costs by fewer delays all along the line, and yet the officials were so shortsighted that they saw no economy in the proposed change. Fortunately the mine officials today have been "sold" on the idea of better trackage and haulage methods.

Progress Being Made in Improving Roads

Had C. A. Allen stepped into the past to make an investigation similar to the one he is now undertaking for the U. S. Coal Commission on wastes in the coal industry, he would have discovered that several per cent of the total costs of producing coal could have been shaved off had the companies realized as they do today the advantages of well-kept haulageways and correctly functioning rolling stock. More and more are mining men realizing that ways are open in which to better their underground transportation, and thus obtain a better all-around efficiency through a better balanced schedule in the several operations involved in coal production.

A number of factors enter into the problem of successful mining. If an experienced operator were asked what is the order in importance of the two main phases that influence the extraction cost, he would place the system of mining as the most essential and haulage next. A good haulage system is advantageous because: First, it eliminates much of the danger to which the underground workers are exposed on haulageways; second, it insures a continuity in transportation which makes for less idle time during the working day.

It might be well to repeat here a statistical statement which was part of Rush N. Hosler's presidential address before the Coal Mining Institute of America last December, even though it already has appeared in these pages. He said in part that in Pennsylvania bituminous mines "one employee in every 250 engaged in haulage is killed each year and that annually one brakeman and trip rider in every 120 engaged in that work likewise is killed." An analysis of his tables (see *Coal Age* of Dec. 21, 1922, page 997) giving the causes of the fatalities from accidents in the haulage of bituminous coal discloses that 28 per cent of these accidents occurring during the last five years on the outside of the mine and 41 per cent on the inside are due to wrecks.

In most cases these wrecks are not the direct fault of the employees. Faulty rolling stock and trackage usually are responsible. More attention to clearances, more effort to keep the haulage roads clean, more provisions to prevent derailed cars from displacing timber, the employment of trap doors that operate automatically and a due regard for discipline ultimately will reduce these percentages to a normal level. Safety is almost assured where correct haulage methods are practiced, and surely the cost of safety cannot be figured in dollars, because life is priceless. The operator owes his employees a maximum degree of safety and to himself what savings he might effect thereby.

But the economy is as inevitable as safety. For this

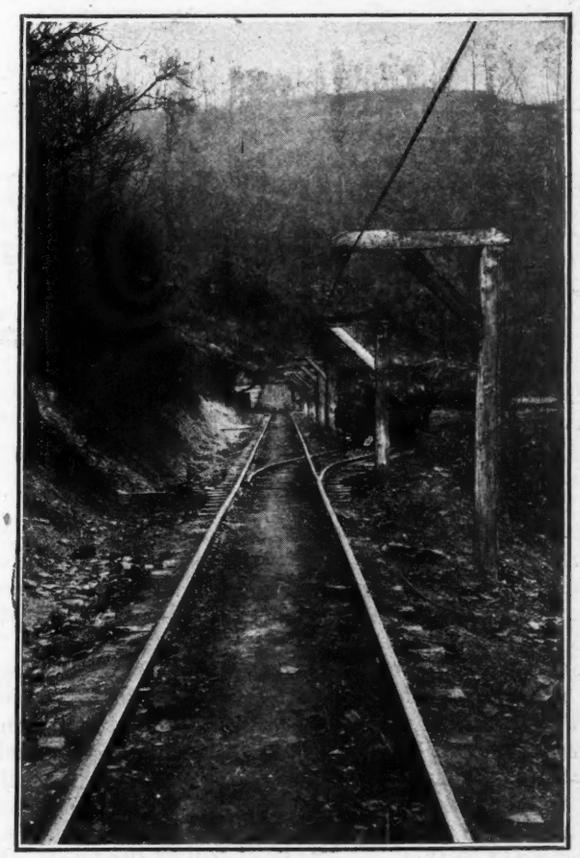


FIG. 1—OUTSIDE TRAMWAY LAID WITH 56-LB. STEEL

There is no reason why the surface, or outside, tramway should not be better constructed and maintained than the underground haulage road. Natural conditions favor such a roadway. With a good track the motorman can speed up his trip, clipping perhaps a few minutes off his running time. The side track leads to the slate dump. Even that is substantially built.

*Assistant editor, *Coal Age*, Pittsburgh, Pa.

reason the savings due to improvements in haulage methods and equipment can be figured in dollars and cents. Proper haulage methods will eliminate many delays and enable the operator to obtain a steady run throughout the day. This will enable him to increase his production.

Where attention is paid to keeping the equipment in good condition the repair cost will be distributed over a longer period and not be "bunched" as it is when equipment causes a wreck and brings many cars and locomotives to the shop at one time, tears up track and pulls down timbers, roof and wiring. Proper attention to the safe practices in haulage will afford steadier work to all persons employed, and this will result in greater efficiency.

Underground transportation can be bettered in two directions—one, attention to the roadbed and the other a study of the more technical features of the problem, such as may perhaps be dignified as engineering. In this article will be considered the simpler—those which may be termed the common-sense—features of the problem.

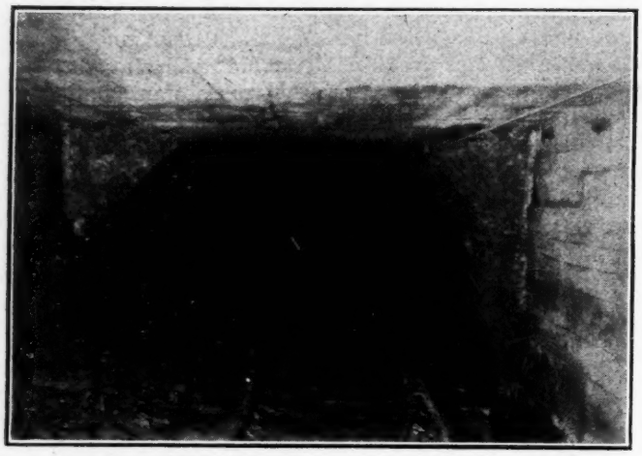


FIG. 3—WELL DITCHED AND DULY CLEANED ROADWAY IN A KENTUCKY MINE

The ditch is on the "tight," or untraveled, side of the road. It not only removes what water might accumulate but assists the crew when the track is to be aligned, for only one side of the roadway need be dug up. A well-drained roadway does not have to be retied frequently. Note the well-trimmed ribs and the arch roof adjoining the overcast.

What are the causes of wrecks on inside haulage roads and outside tramways at bituminous mines? They are many and varied in character. In an effort to arrive at some conclusions regarding this all-important question and in a search for remedies, I have consulted with mining men of four states, consequently the reader need not hesitate to accept the suggestions made for fear that they are merely the ideas of any one person. The suggestions represent the opinions of many men whose assistance was sought.

For safe and economic haulage the track should be well supported and straight to a fault except where curves are necessary to meet changes in direction. Such curves as cannot be avoided should be of long radius. On the main haulages the curves will be so gradual that the motorman will feel assured of safety and so will not cut off any of his power and the only reduction in speed will be that which is the result of the increased friction between wheels and rails and between axles and bearings such as is inevitable when traveling around curves.

If he is not compelled to "feel" his way around a curve then assuredly that curve is properly designed and constructed. The rails should be so well matched that the joints have neither vertical nor horizontal offsets of any magnitude. Then the locomotive and cars will travel quietly except for the inevitable noise of moving parts and rubbing surfaces. The cars will not sway from side to side as the wheel hits irregularly lined joints, nor will the wheels be mounting or dropping at stepped joints. To insure this regularity of track, the rails must be tied together by fishplates firmly bolted and be mounted on ties spaced close enough and ballasted well enough to carry the loads to which they are subjected.

Judgment and not a rule of thumb should be used in selecting the kind and size of ties and in deciding upon their spacing. Sometimes when the spacing seems to be correct the support may be insufficient, due to the condition of the timber. Ties to all appearances sound may be rotted on the bottom, in which case the track is likely to spread or break down at an inopportune moment, failing without warning and causing a serious wreck. There is ample proof, from those who already have thoroughly tried out the plan, that wherever track is to be kept in permanent use, treatment of the ties with wood preservative is both an economy and a safeguard. And here let it be said that only the best ties obtainable should be used. Culls have no place where strong track is desired.

Plate Saves Tie from the Tearing of Spikes

Heavy rail usually is laid underground wherever hauls are long, necessitating heavy and fast trips. The rails should rest on tie plates, especially where the ties have been treated previously with a wood preservative and so are likely to have a life long enough to make it profitable to preserve the timber from the tearing action of the spikes. Large haulage locomotives, weighing from 24 to 30 tons, require not only sufficient support but all that is needed multiplied by a liberal factor of safety.

For all practical purposes rails less in weight than 56 lb. should rest on 5x7 in. ties, and standard railroad ties 7x9 in. should be used where the rails are heavier, especially at curves and cross-overs. No fixed rule has been adopted for the spacing of ties on underground roads. Too often they are set too far apart, with resultant track trouble due to insufficient support.

The track often gets out of line simply because the ties are too few to keep a sufficient grip on the roadbed and spreading is likely to occur if by reason of the sparsity of ties a sufficient number of spikes cannot be driven to hold the rails to gage. It is better always to err in the direction of placing ties too close to each other than to attempt to economize by putting them too far apart. If the track sags the fault should not be placed without investigation on the character of the bottom. It may indicate only that the ties are too few.

If the tracklayers are careless and do not leave enough clearance at the joints before plating and spiking, the rail is likely to buckle. If old track sags and gets out of alignment it may be realigned, the joints may be made tight and ties retamped and conditions may be greatly improved thereby and this without interfering with current operations; but if it buckles, no matter to what extent, there is but one positive remedy and that is to tear up the entire length affected, to jack the crooked rails until they are straight, to shift the ties back into line and to re-lay the track. In many

cases it is an economy in repair cost and a saving in operating time to lay new track and take the old steel to the outside, where it may be straightened and stored for use elsewhere.

The Elkhorn division of the Consolidation Coal Co. maintains a uniform joint clearance of ½ in. in all its mines. A gage of poplar ½ in. thick is furnished all tracklayers for this purpose.

Rails heavy enough to sustain almost rigidly the loads which travel over them should be provided. The growing tendency in mines is toward heavier rail on main haulageways. With the introduction of the electric mine locomotive 40-lb. rail was laid on all major haulage roads so that today only rarely a mine with a production of 1,000 or more tons daily is equipped with lighter rail than this.

In its No. 3 mine the Ford Collieries Co., of Curtisville, Pa., has laid 56-lb. rail on its main haulageways and lays all its curves on radii of 150 to 200 ft., and finds that it pays. In its other mines, until such time as it can make this practice standard, the roads, though provided with curves as easy as those specified for heavy rail, are laid with 56-lb. rail, well braced to the ribs, duly elevated, and laid on 7x9-in. ties.

Heavy Rail for Mine Track Is a Real Economy

This company has found the heavier rail such a profitable investment that all future main-line track will be laid in this manner. Experience has demonstrated clearly to the Ford Collieries Co., that heavy track is really an economy. Rails of 40-lb. weight are apt to spread, especially at curves, whereas 56-lb. rail gives admirable results. This company is only one of many that advocates rails heavier than 40-lb. The jump will be from the rail of 40-lb. weight to that of 56-lb. In fact, not a few companies have been using 70-lb. rails for some time wherever long hauls from the face to the shaft bottom or to daylight necessitates the maximum haulage speed allowed by the law. With the rapid advances in underground transportation, may we not believe that at some future date all the mines with large acreages will be laid with 70-lb. track, and the whole system laid out so as to approach that on our present railroad systems?

Drains as Important in Mine as on Surface

To maintain good track after it is once laid, the entries, wherever water is likely to gather during the wet seasons, must be provided with drainage ditches. In many mines where the roadbed softens and expands when wetted, the management need look no further than this for a cure of its haulage ills. Ordinarily, in a well-drained roadway the waste material of which the road bed is made tamps to a compact mass that gives but little under a passing trip of loads. But when wetted this same material loosens up and heaves, distorting the track and failing to support it properly.

Track shifting can be averted, oftentimes, merely by bracing the rail from the ribs. The number of braces in a unit of distance depends upon the tendency of the track to shift. Two braces to one rail length, staggered to either side, usually is sufficient. One company, on main haulage roads, staggers these braces so that they are placed on 29-ft. centers. However, on curves these braces should be inserted every 8 or 10 ft. It is a wise practice to brace every curve over which locomotives and trips are likely to pass. In any case the braces and ties should not be permitted to project above the level of the roadbed or above the walkway on the clearance side.

Near frogs, guard rails should be used just as frequently in the mine as in standard railroad work. Only too often protection of this sort is looked upon as a needless expense, but this viewpoint is wrong, for the use of guard rails is justified not only by the protection that they give to the traffic passing over the frog but also by the lengthening of the life of the frog itself. If guard rails are used they should be held in position by a suitable guard-rail clamp rather than inefficiently by two bolts, which soon bend back and render the guard rail practically useless.

A company manufacturing track equipment says that the excessive wearing of frog points is the burden of most of the complaints received. Sooner or later any frog point that has become blunted in use is sure to cause a derailment. This company adds that investigation discloses the fact that when complaints as to the premature wearing of frogs arise the frog has not been kept at proper gage, has not been set in accurate alignment or has been subjected to improper wear owing to the fact that the rails adjoining it were not properly supported so as to remain in the same horizontal plane.

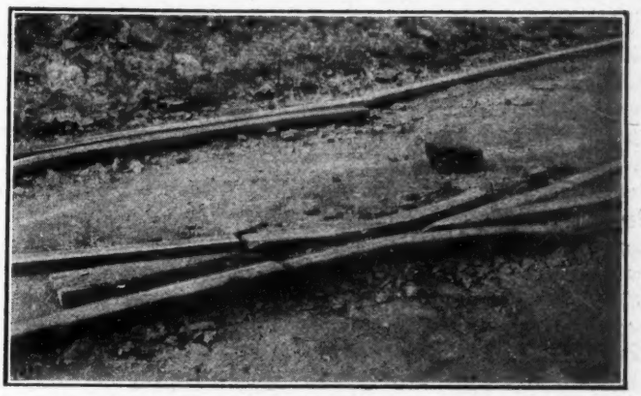


FIG. 3—A SORRY BIT OF TRACKWORK

This illustration was taken at a mine capable of loading out a large tonnage. The frog is a No. 3 and the gage 44 in. Fig. 5 shows in greater detail how the frog is joined to the track. A little care would have prevented all these many fatal errors. Too often is "fatal" the right word, but the trackmen do not realize that fact.

One superintendent set his gage at the frog one-half inch tighter than his standard because "he understood that there was an inch difference between the wheel and track gages." Needless to say, his frog points were badly worn in a short time. After being instructed as to the correct way in which to place his frogs he experienced no further difficulty.

The most serious of all wrecks occur on curves where the proper elevation of the rail is not provided. The height to which the outer rail should be elevated is regulated solely by the speed; therefore main-haulage curves must be elevated with regard to that factor. Where the trips pass over the curved rails at ordinary speeds, the rails are not elevated. Indeed, it would be foolish to carry refinements to that nicety.

Frequently on rope hauls neither rail is elevated, and sometimes, though rarely, the wrong or outer track is the one made the higher of the two. A locomotive trip has a component acting away from the center of the curve. This is a centrifugal force which must be counteracted by elevating the outer rail. On the other hand, in rope haulage the rope pulls the cars toward the center of the curve with a force exceeding that tend-

ing to cause them to fly outward, so they are subject to a centripetal force which must be offset by the elevation of the inner rail.

Switches and frogs to a room neck, even though that room will one day become a haulage road, should be torn up as soon as the room is finished, unless indeed only a short period will intervene between the completion of the room and its use as a haulage road. Some are of the opinion that if that period is a year or more, the frog and switch should be torn up, even though they will have to be reinstated at a later date. Others say that if the idle period is only six months the lifting of the frog and switch is justified. If it is of no use during the intervening time why not tear it up immediately? The chances are that it might be advisable in any event to lay a better track at this point later. Frogs and switches are destructive to rolling stock and the fewer there are the better.

Why Run Railroad on Contractors' Track?

When an entry becomes a main haulageway in the true sense of the word, the rails used in development should be lifted and replaced by well-aligned track. A butt entry usually is regarded as being of that character as soon as the first rooms are driven off it. The development track in a main entry is replaced by permanent, well-aligned track whenever other development has advanced to such an extent that the coal being mined is more than can be handled safely on the temporary track of the entry. It is best, working nights and Sundays, to commence retracking the main entries before the rooms are turned, working progressively, of course, toward the advance workings. The permanent track may not really be needed so soon. However, the work should not be started until sufficient advance has been made to permit of the establishment of grades that can be maintained for some distance. All these are factors that must be considered from the very start of an operation, if safe haulage in the future is desired.

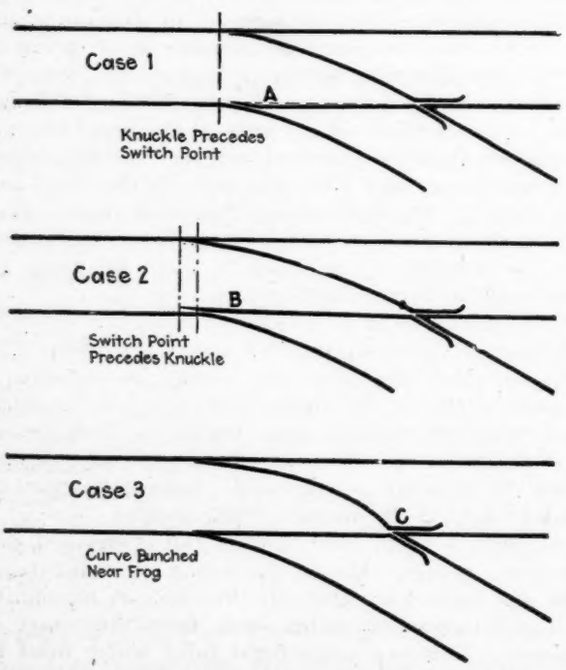


FIG. 4—THREE COMMON FAULTS OF TRACKMEN

The errors in this track have been exaggerated, for a drawing disguises rather than reveals bad switch work when drawn truly and to scale. At *A* the gage of the track is exceeded, at *B* it is tight and at *C* not only is it wide but the turn is also sharp.

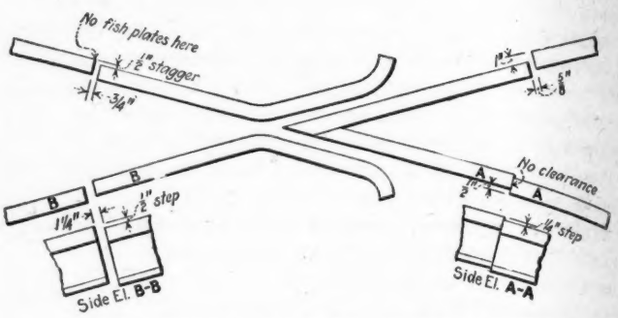


FIG. 5—DIAGRAM OF TRACK WORK IN FIG. 3

Whenever an 8-ton motor passed over this frog it had to climb the stepped joint and the impact was considerable. Similarly the side thrust was severe when the motor took the offsetted joint. The frog base also was not properly supported, nor could it be with both vertical and horizontal offsets. The many tons and the many men passing over this frog would justify an effort to have it truly aligned in every plane.

Switches improperly laid and maintained are the cause of many derailments. Tracklayers sometimes let the knuckle of the rail sit either too close to or too far from the switch point. These mistakes are illustrated in Fig. 4. In Case 1 a motor or wagon traveling on the straight road will hit a point of wide track gage at *A* in passing over the turnout. In Case 2 the track gage is tight and, further, the tracks are so laid that the locomotive or a mine car may split the switch.

Track Gage May Be Faulty Even at Switch

Another mistake frequently is made in laying turnouts. This is the "bunching" of the curve of the turnout near the frog. This, apparently, is the result of not curving the rail before spiking. The mistake usually is discovered but instead of taking up and rectifying the rail, the tracklayer gives more curvature at the end, while one end of the rail is still held down by the spikes. This is illustrated in Case 3 of Fig. 4. The irregular curvature would not be objectionable were the turnout rail installed with a similar curve, but in the case of a circular curve with one end "hooked" as described, the wheels of the mine car or locomotive in passing over the 'hook" change direction too abruptly and rides roughly over the frog, which is soon thrust out of line. Sooner or later such an excessively short turn will lift the rolling stock from the track.

Government Operations at Eska, Alaska

WHEN the Alaska Engineering Commission closed its Eska mine it was not expected that the plant would be started for some time and perhaps not at all. Soon after that a cut in the U. S. Navy appropriation closed Chickaloon and its washery. The commission then decided to purchase its fuel on specifications and moved the laboratory from the cleaning plant to Anchorage and was just getting it ready for analytical work when the Evan Jones mine, adjoining the commission's property, caught fire. The commission's engineers fought the conflagration for a while and then, fuel running short, on Nov. 23 reopened the old Eska mine. The tonnage is picking up. It is now 125 to 150 tons per day. When the spring comes the output may well have been doubled. It will then be time to start the washer so as to have a good store of clean coal for the winter following. Chickaloon is in the region of the Matanuska River, which stream flows into Cook Inlet just where the great Alaska Peninsula roots into the body of Alaska much as a tusk enters the head of an elephant.

Four Ways of Lowering Electric Cables in Shafts*

Cables May Be Installed by Winches Above or Below, by Lashing to Cable and Lowering from Above, by Mounting the Spool Above the Cage and Slowly Lowering the Latter—Dangers and Their Prevention

A SHAFT cable usually is exposed both to mechanical damage and to the corrosive action of the water that falls down the shaft. To protect the cable against falling materials it should be provided with a double armoring. But this, while protecting the cable against falls, is itself subject to corrosion and so needs protection; therefore it should be wound with a double covering of jute, which in turn should be periodically treated throughout the entire length of the cable with pine tar or an equivalent, in order that the jute may be preserved. This should be done every two or perhaps three years, depending upon local conditions.

When a cable is fixed to a shaft wall ample space must be allowed at all points between walls and cable, in order to prevent the latter from being crushed against the wall by falling objects. It should be so attached as to allow it a moderate degree of resilience. Under these conditions it is less likely to be injured by falling bodies.

Shields Keep Out Dirt and Falling Objects

Moreover, the cable cleats should be provided with shields at the top to prevent dirt from accumulating around the cable where it enters the cleats. This shield also serves to deflect falling material by which the cleats might otherwise be injured. Every care should be exercised to prevent the jute from being damaged while being lowered into its place, as may happen if it is allowed to rub against walls or girders . Furthermore in lowering the cable or when placing it by any other method any temporary fastenings to the cable must be made with discretion.

Method 1—Lowering Cable from the Drum of a Steam Capstan or Winch.—This is perhaps the ideal method of getting a cable down a shaft, whether from the point of view of labor or of that of time. With this method the cable end is made fast to the cap of the rope of the winch or capstan and coiled on the drum, after which the end of the cable is fed over a suitable pulley into the shaft. By some other mechanism men are lowered down the shaft in a box at the same speed as that of the cable, which they are thus able to prevent from becoming caught in obstructions. One important consideration, however, must never be overlooked, namely: Is the cable to be lowered so long and heavy that suspending it in the shaft even temporarily from a single point of support will be injurious to it?

Obviously this will depend on the size of the cable and its construction. Thus a cable covered with lead and armored is much heavier than one that is insulated solely by a bituminious covering. To be on the safe side in this respect, it always is advisable to ascertain from the makers whether the cable is of a strength that can be lowered safely in the manner suggested, detailed information being furnished as to the exact method to be pursued. If the cable cannot be lowered in one length, the lower length or lengths must be suspended during the process of lowering, the whole weight hanging and depending meantime on a suitable clamp or socket, to which the winder or capstan rope is attached.

If possible the lower end of the socket should be tapered so that it will be less likely to catch on such obstacles as it may happen to encounter in its passage through the shaft. Having securely fastened a suitable socket to the end of the cable, the capstan rope, assuming that one is used for the purpose, should be attached and the cable carefully coiled on the drum over a bed of sacking or other material, such as will protect the cable from the hard surface of the capstan rope already coiled on the drum and will provide a more or less uniform surface on which to coil the cable.

A suitable pulley must be erected at the top of the shaft, which must be so arranged that a line dropped from the groove overhanging the pit shaft will fall where the cable is to be fixed, but clear of shaft equipment, for by rubbing against such obstructions the cable might damage its jute covering. The groove of the pulley should be large enough for the cable to lie in the base of the groove without being exposed to a crushing side pressure when the weight comes upon it. A layer of soft hemp fastened in the groove will serve as an additional protection. The clamps by which the cable will be permanently supported in the shaft should all be opened before any attempt is made to lower the cable, which should not be allowed to hang from its point of support any longer than is absolutely necessary.

Men Lowered to Keep Cable in Course

Men should be lowered at the same time as the cable to guide the end past any obstacle in its path and also to keep it in the course intended. When a cable has to be lowered in two or more lengths, it is necessary that the lower ones be let down with great caution, especially after the end of the cable which is fastened to the winding or capstan rope enters the shaft.

No matter how ingenious the design of clamp employed for holding the cable may be, it always is possible that it will catch. If this should occur, the descending rope, not being stretched by the weight of the cable, will begin to double on itself. Should the cable then loosen itself in some way, it would fall several feet and a serious accident might occur. Such a sudden load would be sufficient in many cases to strain the cable severely, if not to cause it to break loose.

Such an accident can be avoided if, after it has been ascertained how far the cable can be lowered safely, unattended without going out of its course or meeting with obstructions, the men are raised until they are level with the upper end of the cable and in a position to guide the cap where necessary. After lowering the cable the prearranged distance these men should again be lowered to the end of the cable and preparations made for a further lowering as soon as they have been brought again to the upper end. These operations must be continued until the cable is finally in the desired position.

It always is advisable to have the cable fastened into most of the clamps before the capstan rope is slackened,

*From *Electrical World.*

as by this means the weight will be more or less evenly distributed over the whole length of the cable, which toward its upper end naturally is under a greater stress than are the lower portions. Although in most cases this is not a serious matter, yet in some instances, owing to special circumstances, it may be desirable to relieve the cable of all strain.

To effect this a few of the lower clamps should be fastened and then made to take their share of the weight by lowering the cable a trifle, in order that the weight then hanging will be that of the cable less the lower portion already fastened. This might be repeated two or three times in sections up through the shaft, thus relieving the cable from all strain.

Method 2—Raising Cable from the Shaft Bottom.—This is a convenient method, provided that the cable drum can be taken to the bottom of the shaft. Once there it is placed on a strong bar resting between two substantial supports, so that the drum can rotate. A capstan rope is then lowered and connected by a suitable fastening to the cable end, which is pulled up the shaft and watched by shaft men, who should accompany the ascending cable on top of the cage in order to prevent obstacles from catching it.

Method 3—Lashing Cable to Capstan Rope.—This is method usually advocated by cable manufacturers, because if properly done, it is a fairly safe plan and the cable can be placed without any fear that it will be strained by its own weight. However, much more skill is required, and incidentally much greater patience, and mishaps are more likely to occur than in some other methods of installing.

Cable and Rope Fed Into Shaft at Same Time

In this method a capstan rope is needed as before, but instead of fastening the end of the cable to the rope and suspending it by its end, both cable and rope are fed into the shaft at the same time. The cable is lashed to the capstan rope every few yards, and these attachments serve to support the cable. As just mentioned, much skill is required to make the fastenings between the cable and the rope satisfactory. Unless they are proof against slipping on the rope the cable may pull its spool and everything else with it down into the shaft.

The chief objection to this method is the possibility of the numerous lashings becoming caught here and there in the shaft and thus caused to slide up both cable and rope until long lengths of cable remain unsupported. Furthermore, should the lashings so slide, it will not be without resistance. The jute, in consequence, will become torn and perhaps stripped loose for long distances, thus exposing the cable to the effects of the shaft water. Moreover, one of the objections to this method is the great length of time required to put a cable down a shaft by this method. It would not be wide of the mark to say that from the commencement of operations Methods 1 and 2 can be carried out in less than half the time required for the method that has just been described.

Method 4—Cable Drum Slung on Cage.—The foregoing methods of installing shaft cables obviously are applicable to almost any kind of shaft. A method may be given, however, which can be used where it is not convenient to use a capstan and where rope guides are used.* This method is both effective and rapid. The cable drum is erected between the bridles of the cage. As the cage is gently lowered, the drum, being slowly revolved, is paid off into the clamps in the shaft. Where this is done it usually is necessary to use for the purpose extra long bridles or cage chains so as to leave room in which to erect the drum in the angle between the rope cap and the cage.

To these various considerations it should be added that where a cable is too long to be put down in one length it is necessary to make joints, which should, if possible, be at a heading rather than on the shaft wall, for thereby the joints can be made and permanently kept in a dry place and furthermore the joint can then always be kept where it will be protected from falling material and where overheating or other troubles more readily can be corrected. However, where no heading is available the cable must be joined on the shaft wall, or in some more suitable position if that can be found. In such a case, a vertical type of junction box might be used, but joints of any kind are most objectionable in shafts and should be avoided if possible. At all points below the surface where cables enter or leave the shaft provision should be made to protect them from falling material which might cause injury. Suitable stout wooden coverings should be fixed on the shaft wall and project beyond and surround the cables, which should pass through the covering before bending to enter the heading or other opening.

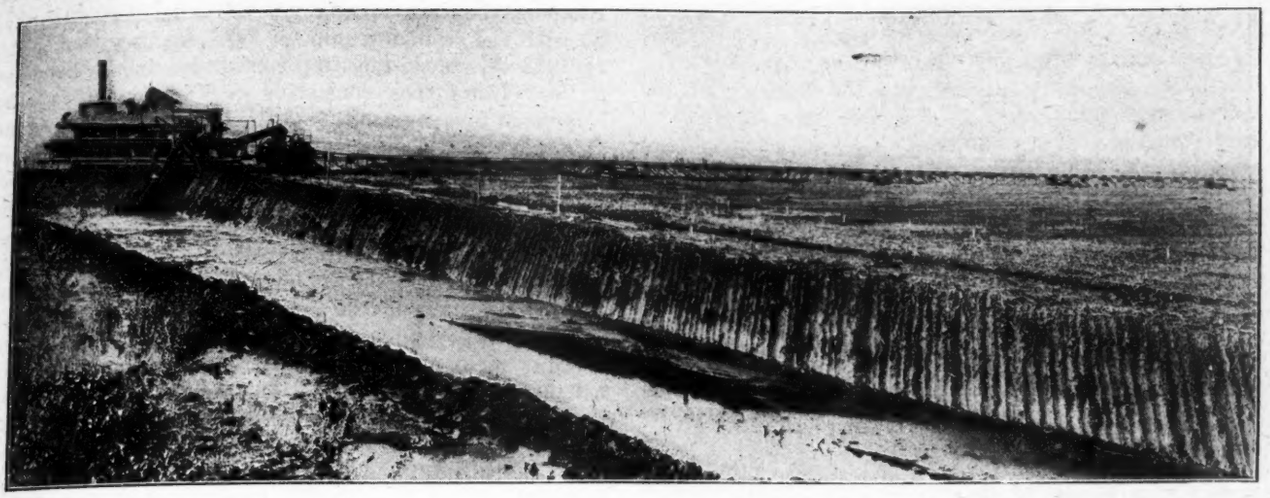
Shaft cables should be examined by the electrician at least every six months and more frequently where circumstances make frequent inspections desirable. This inspection should be made from the top of the cage by the aid of a good light in order that defects may be easily noticed. The breaking of the jute covering and the accumulation of dirt around cables where they enter clamps are the chief sources of trouble which require attention, but more serious damage always should be anticipated and its presence sought.

*This cannot well be used in American coal mines, where rope guides are seldom if ever used.

Can Peat Be Used to Bind Coal Briquets?

THE readiness with which peat will coke without any binder suggests that it might be used with a coal lacking in agglutinant to give the necessary binding quality. It would be essential that the peat be obtained from bogs readily available to the mine or the market, for it probably would not pay to transport the peat any distance. The Peat Products Corporation has set up a press at its bog at Eaton Rapids, Mich., and at the present time is producing peat briquets for sale. These it is selling in the neighborhood of Grand Rapids, Mich.

The process is exceedingly simple, consisting of passing air-dried peat containing 35 per cent of moisture directly into a Universal press. A. L. Stilllman, in his book on "Briquetting," says: "It is probable that a change in the structure of the peat is caused by the successive linear pressures produced by this press and that the water is thrown from its colloidal condition in somewhat the manner claimed for the Ekenberg process. At all events the peat, which has reached its limit of air drying at 35 per cent, goes after it is in the briquet form, through a secondary drying which is accompanied by setting and hardening. The result is a fuel that is not degraded in shoveling and is as convenient to handle as coal. By reason of its briquetted form and the nature of its combustion it has a heat-radiating power which, for stove or hearth at least, gives the briquet a value far beyond what its B.t.u. content would indicate."



Canada Hopes Peat Will Displace Much Anthracite

Dominion Has Mapped 190,000,000 Tons of Peat Fuel—One Machine Will Produce 100 Tons per Day—Peat Costs $5 per Ton at Plant—Gives Two-Thirds as Much Heat as Anthracite

BY E. L. CHICANOT
Montreal, Que.

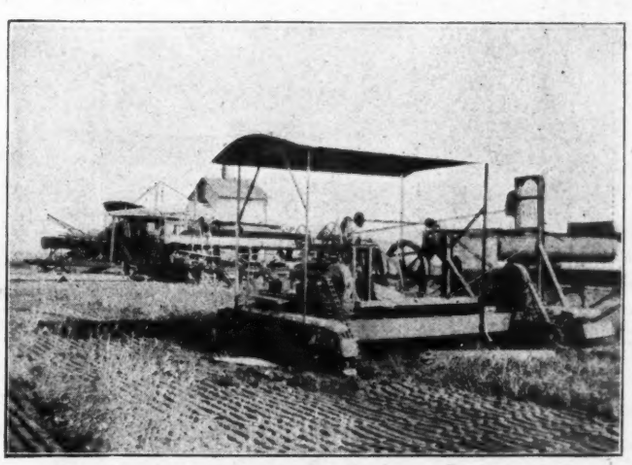
UNTIL the winter of 1921 few Canadians and still fewer residents of other sections of the North American continent were aware that Canada had any peat resources, and if they did know in a vague way of the existence of peat bogs they did not realize that these had any commercial value or that any steps were being taken to exploit them. It was only when the coal shortage hit the country and dealers and consumers were sent scouring in all directions for fuel or a substitute for fuel that it was discovered that due to government foresight, experimentation and development, a supply of peat fuel, limited it is true, but valuable nevertheless, was available.

Though not enough to have any appreciable effect upon the general fuel situation it partly solved the problem for some few consumers. It disclosed the information that, if properly and adequately developed, Canada's peat resources were sufficient to cut out one-fifth of the anthracite imports on which Canada is dependent each year.

The Government of Canada has, however, always foreseen the possibility of such a stoppage in the fuel received from the regular sources in Canada and the United States. Canadian legislators have been always painfully aware that eastern Canada is dependent upon the United States for its fuel supply and that one of the most pressing of national problems was the discovery of a solution of this situation. One of the means taken toward the ultimate removal of the difficulty has been to conduct experiments of a commercial size upon the peat bogs of the Dominion in order to discover whether these peat resources could be turned to economic account and become a rival of anthracite.

The great interior of Canada has been created without supplies of suitable coal but Nature apparently made some provisions nevertheless, for this expansive area abounds in peat bogs that will be permanently available as sources of fuel as soon as the necessary developments are made. These bogs are well distributed throughout the middle provinces and cover in all some 37,000 square miles. In many of these areas the peat is particularly well suited for manufacture into fuel for domestic and power purposes, the bogs being conveniently situated as regards transportation facilities and lying not far from industrial communities.

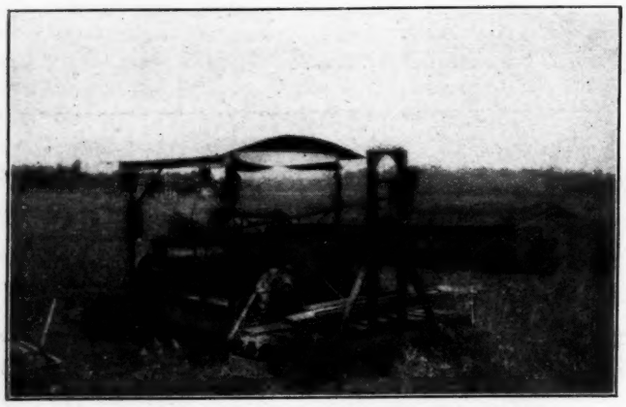
In the Province of Ontario alone there are thirteen bogs estimated to contain 43,000,000 tons of peat and capable of producing 1,800,000 tons of ammonium sulphate and gas power sufficient to generate 40,000 hp. continuously for 100 years. A government board dis-



SPREADER AND EXCAVATOR AT WORK IN PEAT BOG

The spreader is in the foreground. The spreader lays the peat down in a thin layer and with revolving disks cuts the mass into long narrow rows so that the sun can dry it. The water in peat is in the form of a jel; it cannot be squeezed out any more than the water in a jelly.

NOTE—The headpiece illustrates the Alfred peat bog in Prescott County, eastern Ontario, near the Ottawa River, which forms the Quebec border. The equipment includes the excavator, the conveyor, grinder and spreader. Note the large area over which the peat is spread for drying.



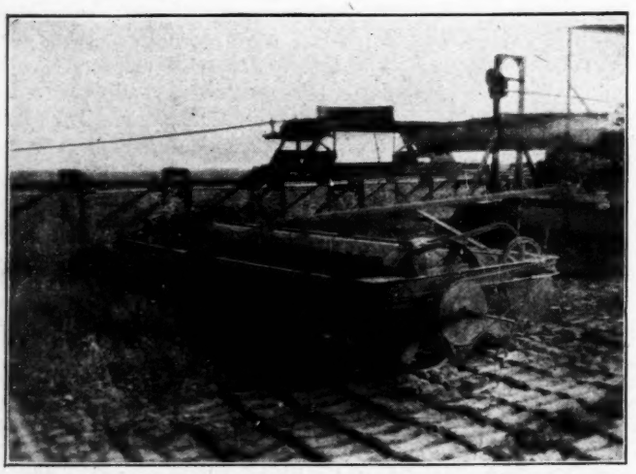
REAR VIEW OF SPREADER WITH CATERPILLAR TRACTOR

The spreader receives the excavated peat from the rear, the product being brought by the conveyor shown in the headpiece and in the illustration of the roller cutter.

covered eighteen bogs in Manitoba and its report stated that the Winnipeg River district contained 1,860,000 tons of peat fuel, if dried so as to contain 25 per cent of moisture. Less than one hundred miles from Montreal there are seven bogs the resources of which run into the billions of tons.

Efforts to utilize Canada's peat bogs commenced more than half a century ago and were continued in the period up to the end of the war in a spasmodic and desultory manner. In the main they were not satisfactory, and the average pre-war output in the entire country was only about 2,600 tons. An investigation by the Dominion Mines Branch determined that this failure was due to the fact that the producers of the commodity did not know how it should be handled and had not availed themselves of the experience and practice of European producers. If the commercial exploitation of Canada's peat deposits had depended upon private companies or individuals there is little doubt that Canada would today be but little nearer alleviating her fuel needs with supplies of peat than she was when the Mines Branch first approached the problem.

Canada's fuel problem was practically the first to occupy the attention of the Bureau of Scientific and Industrial Research when it was formed, and though one method of solution attempted was the utilization of the lignite deposits of southern Saskatchewan by briquetting, thus providing for the Middle West, the other method was the development of Canadian peat bogs. In 1918 the whole question was placed in the hands of a Peat Committee, consisting of four members, who conducted investigations into the peat bogs of the entire Dominion with a view to establishing their utility as a source of fuel.



ROLLER CUTTER MAKES BRICKS FROM STRIPS OF PEAT

By pulling a roller cutter with the sharp edges set at the correct centers athwart the strips laid by the spreader the peat is cut into bricks of the correct size.

To date of the 37,000 square miles of peat in the Dominion 105 bogs have been surveyed with an aggregate area of approximately 224,131 acres. These contain 190,330,170 tons of fuel and 20,588,110 tons of litter. Forty-six of these bogs are in the Province of Ontario. They have a total area of 132,231 acres and contain about 110,109,000 short tons of peat fuel and 518,000 tons of peat litter. During the past year four bogs were surveyed in the province, a total of 11,089 acres being investigated. Three are situated near the cities of Fort William and Port Arthur and the fourth near Verona. All were found to contain peat suitable for fuel.

Both on account of the greater need of the industrial area about it and the favorable nature of the deposits, and the additional fact that the Ontario Government had preliminary investigations already under way in that area, attention was devoted by the Peat Committee to the bogs about Alfred, in Prescott County, Ontario, not far from Ottawa. Experimentation and development has been practically concentrated at that point. When the committee turned its attention to the possibilities of this bog much work had been done already with machinery of a rudimentary character. Peat was about to be shipped in 1914, when the outbreak of the war disorganized markets and traffic and set back development. The Peat Committee immediately and definitely adopted the process of air drying, feeling assured that it was the most efficient and practical way in which to rid the peat of moisture. This made the problem a purely mechanical one and the committee proceeded to attempt its solution as such.

Price for Years Has Been Real Difficulty

In surveying the work that has been accomplished by the committee on the Alfred peat bogs since that time it must be borne in mind that it has this problem to solve and that all efforts were of an experimental and investigatory nature. The fact that fuel could be manufactured from these bogs already had been established; the problem confronting the committee was to devise a system of manufacture that would permit the finished product to compete with imported hard coal. Working with the old plant already on the ground in 1919 3,000 tons of peat fuel was produced, and it found a ready market.

During 1919 a new machine had been designed to remedy faults found in the one preceding and the two operated in competition throughout the year 1920, producing 5,500 tons of manufactured peat. For the product a remarkable demand developed, inquiries coming from New Brunswick and Quebec points. The bulk of the product, however, was consumed in Ottawa and other points contiguous to the manufacture, though some went as far as Three Rivers, Que. A close study was kept upon the two machines throughout the year, with the result that the committee concluded that both could be improved, and accordingly a new machine was designed combining the best points of each of the other two.

The year 1921 was occupied largely in the construc-

tion and erection of the combination plant, so that the year was to a great extent one of continued experimentation and development along other lines than production. In order to keep up a certain proportion of the output one of the condemned plants was continued in operation throughout 1921 and a total of 3,889 tons of peat produced. Of this 1,500 tons was shipped to markets which had already been developed and which, in the previous year, could have absorbed ten times the production. An unfortunate fire of unknown origin consumed practically the entire remainder of the output and put an end to shipping for that year.

The work of the year, however, was of great value, for it demonstrated the value of the new plant, which fully met the expectations of the engineers who had designed it. The machine had a capacity of ten tons per hour and was expected to maintain an output of 100 tons per day of ten hours.

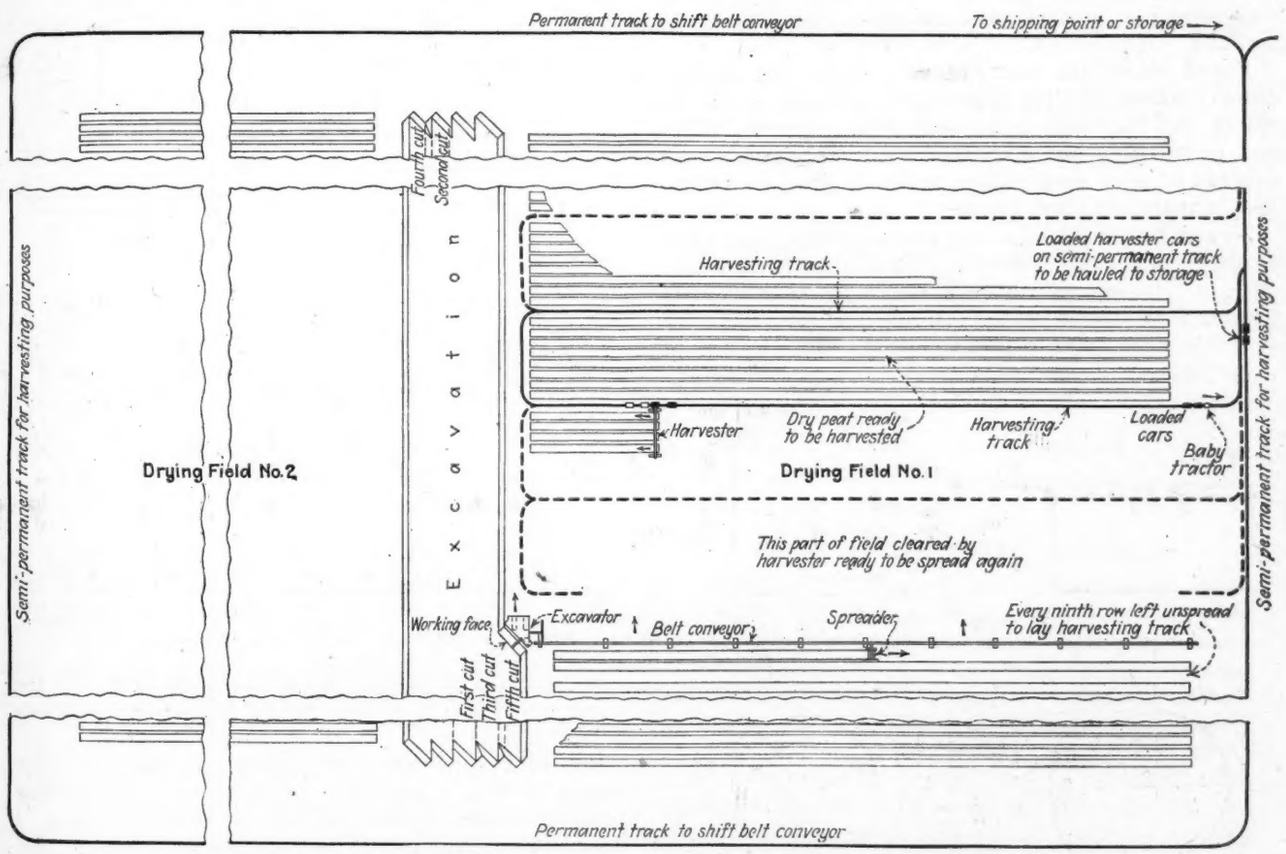
Another achievement of 1921 was the development of a small machine which can be operated by three men, the production of which will average about two tons per hour. The machine thus made and perfected was devised for use on small bogs where it may be used by farming communities to supply their local needs. It may be of value also in finishing up the irregular work on extensive deposits to which the larger machines could not readily adapt themselves. In developing this machine the engineers had Ireland in mind, which is the principal peat-producing country of the world. In that country the annual production runs into millions of tons, all of which is the result of work upon small areas.

In the early part of the year 1922 a new and improved grinder was installed in what was considered an already perfected plant. Delays incident to this curtailed the length of the actual working season. Furthermore, the power equipment of the plant was found insufficient to operate the new grinder at its full capacity, so that the year's production, in even the abbreviated period, does not represent the seasonal capacity of the plant or its possible output. Instead of the capacity output of 100 tons in ten hours an average of 73 tons was turned out over the entire period of operation, though, taking into account the loss of time in getting under way, the production was actually 89 tons per day of ten hours.

Peat Fuel Found Eminently Satisfactory

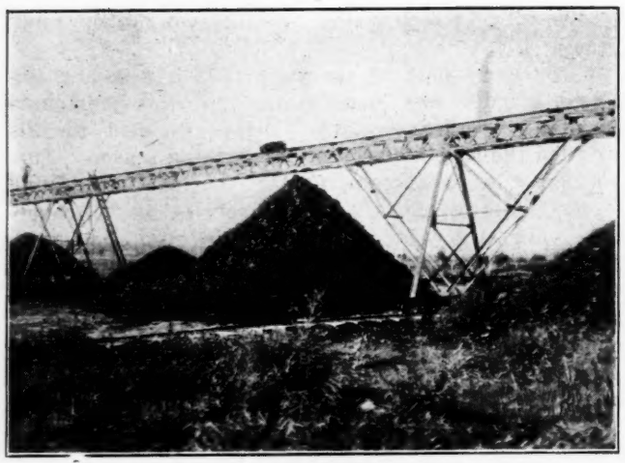
The total production of peat at the Alfred bog in 1922 was 5,000 tons. This was distributed over a wide area in eastern Canada, large consignments going to Montreal, Ottawa, Peterborough and Belleville and landed at these points at prices which made it easy to compete with coal. In every case the peat was sold to customers of 1920 and 1921 who had been eminently satisfied with previous consignments and had placed their demands for the 1922 crop early in the summer. Not a single complaint was received from any consumer of the peat prepared in 1922.

This peat was laid down at the track at Alfred, Ont.,



PLAN OF HARVESTING FIELDS SHOWING EXCAVATING TRENCH, EXCAVATOR, SPREADER AND HARVESTER

The excavator does not work on a face in the same direction as the excavation but on one inclined as shown, at an angle of 45 deg. The peat contains 88 per cent of water and 95½ per cent of that water is removed, for in 100 lb. of natural peat there will be 12 lb. of solid matter and 16 lb. of product where the water content is 25 per cent, or 4 lb. Thus 88 lb. of water has been reduced to 4 lb., or 84 lb. of water out of 88 lb. have been withdrawn, or about 95½ per cent. From a content of 733 per cent as compared with the solid matter in the peat it drops to 33 per cent. This result is obtained by spreading the peat over a large field in long rows of nine. Between each ninth row is laid a temporary harvesting track and on the edge of the field on either side a track that is permanent. The season for drying and therefore cutting peat is only 100 to 120 days long. On the other two sides of the field tracks are maintained for shifting the conveyor from one drying field to the other.



TRESTLE FOR PILING MANUFACTURED BRICKS OF PEAT

It is remarkable how strong these bricks are after drying for from two to four weeks on the ground. There is a cementing material in them which acts when the peat dries. It is not wholly dried, of course. About 25 per cent of water still remains.

at $5 per ton, the difference between this and the prices paid by consumers representing freight rates and dealers' profits. This price covers the entire cost of operation and all overhead—the running of the perfected plant which consists of a combined excavator, grinder, belt conveyor and spreader, the turning of the peat bricks, which is performed by hand, and the trucking to storage or loading for shipment. It is the conclusion of the engineers that at this price the product can be manufactured commercially with a reasonable profit and that the price might even be shaded a trifle if the power problem were adjusted. Indications are that the operation of the Alfred peat bog may be taken over by a private corporation in the present year.

Anthracite has only 1.5 times as much heating value as manufactured peat, the latter being largely free of ash, which in coal may amount to between 10 and 25 per cent. Peat has been mixed successfully with anthracite and this is fortunate for practical usage, for if all Canadian peat bogs were producing they would reduce anthracite importations barely one-fifth.

How a Change in Valves Greatly Lessened Feed-Pump Repairs at Nacmine, Alta.

BY J. B. DE HART
Nacmine, Alta.

AT OUR mines at Nacmine, Alta., we have had much trouble with the brass valves in our feed pump, and the method by which we have overcome the difficulty may be of use to others who are experiencing the same trouble.

Fig. 1 shows the seat and valve for a duplex feed pump 7½x4x6½ in. The pump has eight such seats and valves, and they were continually giving trouble. They had to be taken out and faced up in the lathe on an average of once every three weeks, so that we had to keep a spare set always ready.

We redesigned the seats and valves and had them made as shown in Fig. 2. The valve disk and washer are held on by a ⅜-in. nut with a ⅛-in. cotter pin through it to prevent its working loose. The nut is not shown in the drawing. The valve is then rubber to brass instead of brass to brass. We had two sets of valves made of the new design so that there would be no delay when they needed repairs.

The first set was put in more than one year ago and has never had to be taken out except for inspection. The disks have never been changed and appear good for another year and the second set has proved itself unnecessary. The quality or the quantity of water the pump has had to handle has not been changed and the valves are working under exactly the same conditions as before.

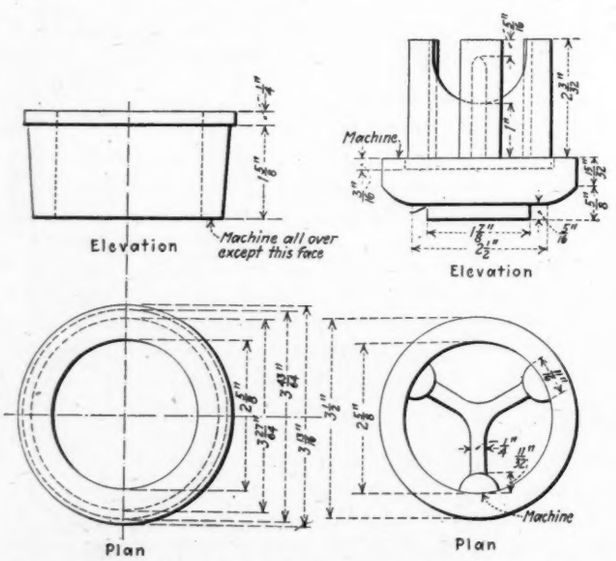


FIG. 1—SEAT AND VALVE PROVIDED FOR FEED PUMP

Valves and seats such as these had to be taken out and faced in a lathe once every three weeks. It will be noted that brass was in contact with brass and the result was not good.

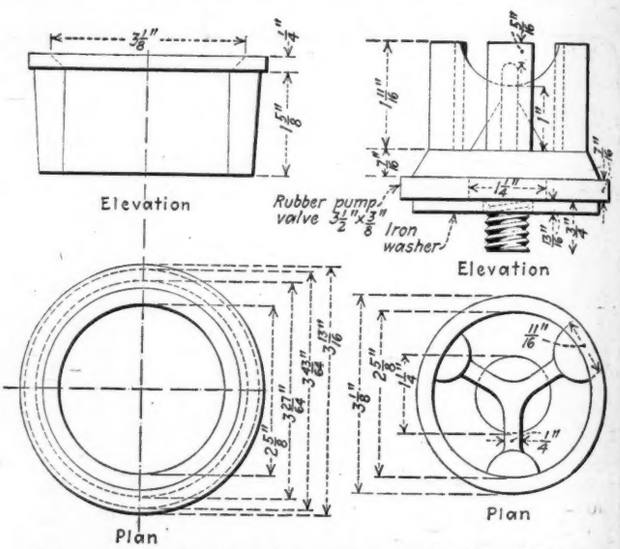
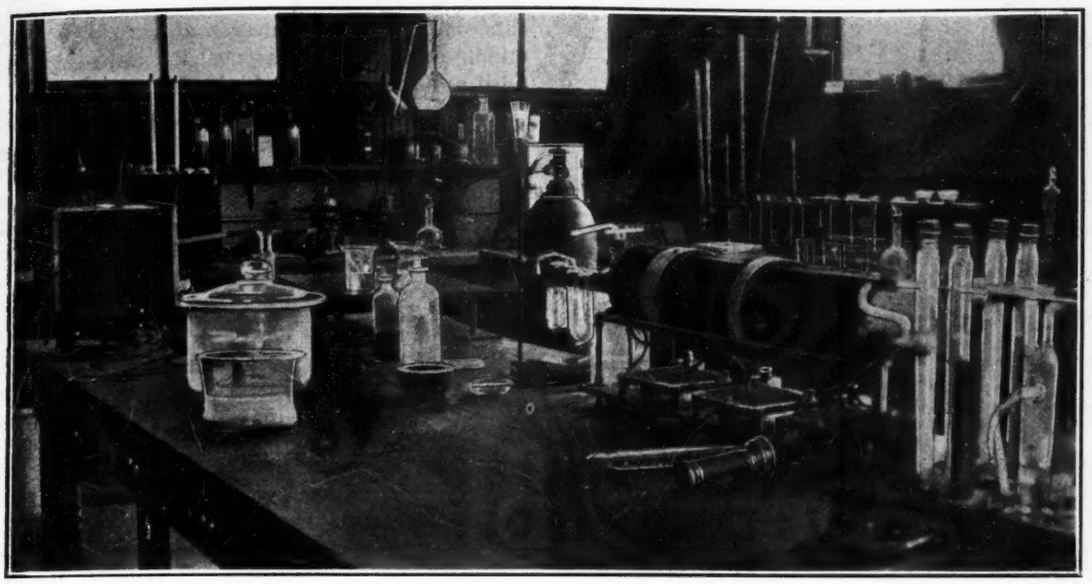


FIG. 2—SEAT AND VALVE REPLACES THAT IN FIG. 1

In this the valve is provided with a rubber disk that is held in place by a washer. The contact is between rubber and brass, and a tight connection is thus attained. After a whole year the seat and the valve are still giving good service and, what is more, have needed no repairs.

No doubt many other pumps have the design of valve shown in Fig. 1 and they probably are giving their owners the same trouble and expense that our's gave. I can assure anyone in this unfortunate predicament that new valves and seats made up as shown in Fig. 2 will entirely overcome the difficulty. This is one of the instances, not infrequent about the mines, where a little common sense and ingenuity applied to design will sometimes work wonders in the way of improved operation.



How Pennsylvania Coal & Coke Corporation Keeps Its Product in Compliance With Severe Specifications

Company Inspectors Visit Mines Unannounced—Mine-Car and Coal-Face Samples Taken and Analyzed Periodically—Records Make It Possible to Trace Back the Contents of Any Car to the Place Where Loaded

DURING the constricted market for coal in 1921 and in the pre-strike period of 1920 important advances were made in the preparation of coal. In the past one occasionally heard the trite remark that "Coal is coal," and some men were indifferent as to the quality of this fuel so long as the price was right. Consumers now are being educated to demand clean coal and no other kind will do. The shrewd buyer would no more think of buying coal without investigating its merit than he would consider buying a high priced animal without looking up its pedigree. He demands a certain grade, and he gets it.

With more mines opened up than are really needed in normal times, manned by too many miners, it is unlikely that the coal demand for any length of time in the present or next generation will ever again exceed the possible output. Keen competition must result—not in price alone but in quality also. For this reason a new era in coal mining and preparation is upon us. The change, though still in its infancy, is marked enough to be readily noticeable.

From now on the operator will have to study extraction from the viewpoint of quality as well as quantity. Hereafter coal will have to be sampled and analyzed and closer watch will have to be kept over preparation above and below ground. And not only that; there will be, hereafter, a closer relation between the operating and the selling departments. The distributing department will act as an adviser to the mining officials, for the men who sell the coal are better informed regarding the demands and needs of their customers than the man in the production department.

Inspections Made by Traveling Experts

The Pennsylvania Coal & Coke Corporation, with operating offices at Cresson, Pa., is obtaining from its mines a more highly merchantable coal by laying greater stress on rigid inspection, on correct mining methods and on the preparation of its coal. The corporation has thirty mines within a radius of 25 miles of Cresson. Four seams are being mined, with an average thickness of 42 in. They are known locally as the B, the C′, the D, and the E seams. The names of the beds are the Lower Kittanning, the Upper Kittanning, the Lower Freeport and the Upper Freeport respectively.

Three coal inspectors are employed to supervise the mining and the preparation of coal. Each man travels from mine to mine, and makes his visits entirely unannounced. In this way the miners and officials at each mine are kept "on their toes" at all times. The length of time between these visits varies from mine to mine.

Note.—Headpiece shows testing laboratory of the Warner Laboratories, where tests of the coal of the Pennsylvania Coal & Coke Corporation are made.

COAL INSPECTOR'S DAILY REPORT

Colliery Date

Number of men cleaning coal:

a. On Picking Tables

b. On Railroad Cars

General Remarks on appearance of coal as shipped:

Miners Found Loading Dirty Coal

Check Number of Miner	Where Working	Remarks on Condition of Working Place

Samples (For Laboratory)

Weight of gross Sample — How and when taken — Ash %

lb. — Sulphur %

Report and Suggestions

Coal Inspector.

FIG. 1—REPORT FORM FILLED IN DAILY BY EACH INSPECTOR

Mines with a reputation for producing clean coal, as disclosed by analyses, are visited less frequently than those which do not maintain their standard so unerringly.

These men are not coal inspectors as we understand the term—they do not merely examine superficially the coal in the mine wagons or the railroad cars. Rather, they combine the functions of company mine inspectors with that of coal-preparation advisers. An inspector spends at least one whole day at the mine at each visit. Arriving in the morning, the forenoon usually is spent on the surface about the tipple.

As all the seams mined in this region outcrop, all the mines are entered through drift openings. The inspector stands on the load side of the tipple and removes a shovelful of coal from each mine car as it passes him. Thus he accumulates a sample that is truly representative of the output of practically the entire mine. This weighs from 1,200 to 2,000 lb. This is crushed and then quartered until a 5-lb. sample is obtained, which is sent to the chemical laboratory for analysis. He also examines the coal in each car as it passes, and, should the coal in any car show enough refuse to indicate that the coal is mined or loaded carelessly, he makes a record of its appearance and of the check number that the car bears.

In the afternoon the inspector goes underground and inspects the working places, in particular those from which he has noted that dirty coal is coming. Arriving at such a place he first makes a careful examination of conditions, studying the roof, the seam and the bottom, and seeking to determine the reason why the coal from this point is below the standard, so as to ascertain whether the carelessness of the miner or the physical condition of the seam is the cause of the impurity. If he believes that the miner is not to blame, he advises him as to the manner in which cleaner coal may be obtained.

Should he suspect the miner of carelessness, he questions the latter with reference to the mining methods employed. The miner is cautioned to be more careful in the future, and the mistakes in his mining or loading methods are explained to him. The offender, moreover, is disciplined in accordance with the clause in the union agreement regarding the loading of dirty coal. If underground regulation does not improve the quality of the coal, then surface preparation is bettered either by placing more men on the picking table or by other means.

The inspectors not only take samples of the run of the mine but sample the coal at the face. This is done in accordance with the standards of the U. S. Bureau of Mines, the coal being removed in three vertical channel cuts, one being taken at each of the ribs and one in the middle of the face. The coal is crushed and quartered until a 5-lb. sample is obtained for analysis.

When the system was first put into effect, representative faces in the several working sections of each mine were sampled and analyzed. As occasion has demanded, further samples have been taken. This becomes necessary whenever the run-of-mine analysis shows too high a percentage of ash and sulphur and a given section is suspected, or whenever a given section has advanced considerably since the last sample was taken.

This system opens up a wide field for a "better coal" movement. As time goes on new ideas will crop up to better it, and a better working basis will be established. At one of the mines the analyses of the coal at the face are recorded on a special map. At another mine the check numbers of the miners are noted on the map opposite their respective working places. It is likely that in the future such graphical records will be prepared and maintained for all the company's mines.

Can Trace Bad Coal to Rooms Producing It

The chemical composition and the character of the beds in the Lower Productive Measures, especially the Freeport seams, are known to vary (sometimes considerably) within the bounds of a single acre. This phenomenon is not conducive to a uniform shipment. One of the purposes of the system is to supply the customer with a coal the heating value, ash-fusing temperature and proximate analysis of which will vary but little. The corporation is familiar with the physical and the chemical character of the coal at the several working places in their mines. Only with this knowledge can the official determine a possible constant in composition and work to attain it. Orders usually are filled to satisfy certain specifications.

Record is kept of the check numbers on the mine cars, the contents of which are loaded into any one railroad car. The record is filed away so that should a complaint be made the loading schedule may be adjusted to remedy any shortcoming. Each check number gives information at once as to the miner, place and coal composition.

Each coal inspector is provided with a form for a daily report which he fills out at the close of the day's run. This form is shown in Fig. 1, and it affords an excellent digest of facts. By comparing the periodic reports of the same mine a definite conclusion may be reached as to whether the output of the mine is uniform, improving or declining in quality. It also affords a means of comparing different mines. The report blank is practically self-explanatory. As may be noted, an opinion as to the efficiency of the coal preparation may be formed by studying the reports. The effect of placing a large or smaller force of men on the picking tables and on the railroad cars is shown by the ash and sulphur percentages which the chemist supplies.

The analyses are made by the Warner Laboratories, located near the operating offices at Cresson, where an experienced graduate chemist runs all the chemical analyses, which are more detailed than those usually made by coal companies. All the determinations are made in accord with the U. S. Bureau of Mines' Standards. Referring to Fig. 2 it will be noticed that a com-

plete record is made of both the method of sampling and the results of analysis. Not only is a proximate analysis made but the sulphur content, the thermal value and the fusing temperature of the ash are ascertained.

A representative analysis of the Lower Kittaning seam, marketed as Webster coal, copied from an analysis and coal sample report chosen at random shows that the ash varies between 6.13 and 6.58 per cent and the sulphur between 1.19 and 1.43 per cent. The heating value ranges between 14,600 and 14,700 B.t.u. The fusing temperature of the ash is 2,600 deg. F. The coal from the other three seams, tradenamed the Pardee coal, has an ash value of 6.32 to 6.61 per cent and a sulphur content of 1.09 to 1.33 per cent. The heat value of this coal is about 14,500 B.t.u.

The coal inspectors' daily reports are filed away, those from each mine being kept in a separate folder. If a complaint is received from a customer, it is filed away in the folder of the mine from which the shipment was made, adjacent to the nearest report either before or after the shipping date. The mine superintendents meet in conference periodically. The records of each mine in individual folder form are conveniently accessible for reference at these times.

The coal inspectors soon develop marked proficiency in their work. Because they specialize on this one phase alone and because of their experiences at a number of mines they become experts in their line and readily determine the cause of dirty coal and are able to suggest a remedy. Neither the mine foreman nor the superintendent has time to accomplish the results attained by the inspectors. An impartial outsider will grasp the situation more readily and bring about the necessary change in methods with more expertness than a man who has given the subject less attention and has had a narrower experience. A system such as this results in better and better coal as the wrinkles in its operation are ironed out.

RECORD AND ANALYSIS OF COAL SAMPLE

1 — Name of Operating Company.....

2 — Name of Selling Company.....

3 — Name of Mine..... (a) Name ..... (b) Kind of Opening .....

4 — Location..... (a) Distance from..... (b) Nearest R. R. Station ....., (c) Township ....., (d) County ....., (e) State .....

5 — Coal Bed..... (a) Local Name ....., or..... (b) Geological Formation .....

6 — Sample of..... State kind of Coal—Anthracite, Bituminous, Semi-Bituminous, etc.

7 — Taken from ..... Mine, railroad car, mine car, tipple, washery, drill hole, storage pile, etc.

..... Describe fully

8 — Gross weight of sample collected..... Pounds.

9 — Method of collecting gross sample..... Describe fully

..... Describe fully

10 — Method of obtaining Laboratory sample..... Describe fully

.....

11 — Net weight of Laboratory sample..... Pounds.

12 — Roof..... Kind and Characteristics

13 — Floor..... Kind and Characteristics

14

NO.	SECTION OF BED	FEET	INCHES
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
	TOTAL THICKNESS OF BED		
	THICKNESS IN SAMPLE		

15

.....Laboratory

Date..... Laboratory File No.....

	AS REC'D	DRY
Moisture		
Vol. Matter		
Fixed Carbon		
Ash		
Sulphur		
B. T. U.		

Fusing Temperature of Ash °F.

.....Chemist

16 — Excluded from Sample—Section Nos.....
NOTE.—Exclude from Mine[or "face"]sample, all partings that are rejected in mine or at tipple, and make record [x] in above table [14]

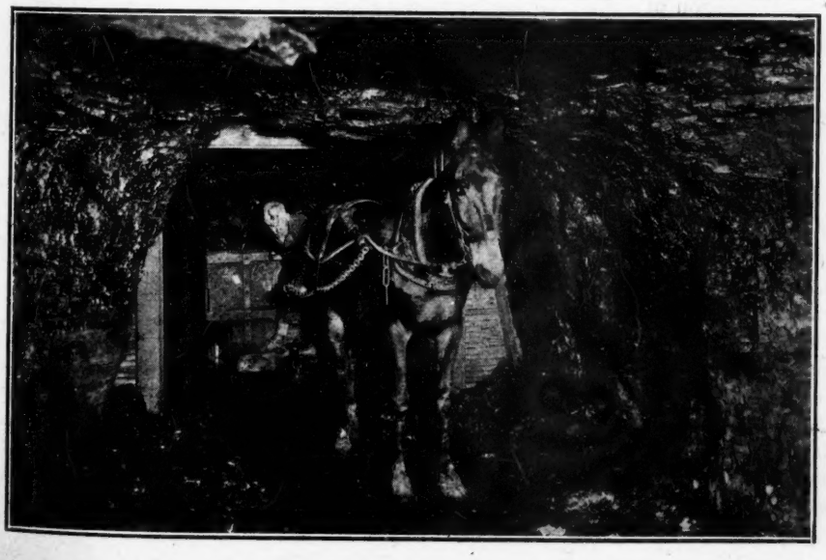
17 — Collector .....

18 — Date .....

19 — Sample No. ..... Engineering Department File No.

Record to be made in triplicate and all copies forwarded to the Chief Engineer.
Identification tag marked "Pennsylvania Coal & Coke Corporation, Sample No....." to be placed inside container with sample.

FIG. 2—CHEMIST'S REPORT BLANK



Spillertown Sam Dead; Aged 32 Years

Spillertown Sam was in the coal business over twenty-six years. He died on Dec. 24, 1922, at the Peabody company's No. 3 mine, Marion, Ill., at the ripe old age of 32 years. Spillertown Sam enjoyed a life of ease for the past six years on a Peabody Coal Co. pension. The company provided him with a ten-acre field, well wooded to shelter him in the summer time, and a comfortable barn with an attendant to take care of him. While in active service this mule averaged twenty miles per day, year in and year out, underground, hauling coal and never met with an accident serious enough to incapacitate him for work.

Institute to Canvass Subsidence of Mines

WHEN the American Institute of Mining and Metallurgical Engineers meets on Feb. 19 it will take up on the first day the subject of "Ground Movement and Subsidence." In fact this is one of the more important subjects relative to coal mining that will be presented at the 127th meeting. H. N. Eavenson will offer the main subject at 9:30 a.m. on the opening day. Someone will then offer some remarks on subsidence in Southwest coal mines and George S. Rice will speak on the subject of "Problems of Ground Movement and Subsidence," illustrating his article on the screen. J. Parke Channing will present a paper entitled "A Study of Subsidence at Miami, Ariz.," and an address will be delivered on "Ground Movement and Subsidence at the Inspiration Mine."

In the afternoon two papers will be delivered on the breakage of tool steel, its hardness and the relation of heat treatment to both, and the industrial relations section will discuss Americanization, cripples in industry, education, employment, housing and recreation, mental factors in industry, sickness prevention and safety.

To Discuss Standardization of Mine Maps

A meeting of the mining section will be held the next day on "Mining Methods at the Marquette Mine" and on the "Standardization of Mine Maps." At this meeting a report will be made on the classification of mine methods. A coal-mining section will at the same time be addressed by Thomas Fraser and H. F. Yancey, their subject being "Interpretation of Results of Coal-Washing Tests." A. B. Crichton will address the institute on "Mine-Drainage Stream Pollution." Edward O'Toole will give a paper on "Unit Costs in Coal Mining in the Pocahontas Field," using units of labor and material per unit of accomplishment as the means of deriving these unit costs, that being the method of presentation requested by the mining methods committee.

In the afternoon M. W. Ditto will describe the "Design and Operation of the Roberts Coke Oven"; A. R. Powell, "Forms of Sulphur in Coal and their Relation to Blast-Furnace Reactions"; R. A. Sherman and John Blizard, "Combustion in Fuel Beds of Blast-Furnace Cokes"; G. H. J. Perrott and S. F. Kinney, "Combustion of Coke in Blast-Furnace Hearth."

In the afternoon a mining session will be held in which C. E. Barneveld will discuss "Mechanical Loaders at an Underground Mine." In the mining session of the following morning Galen H. Clevenger will speak on Liquid-Oxygen Explosives." A joint session of the committee on industrial relations and the mining section of the National Safety Council will discuss under the chairmanship of B. F. Tillson "Hoisting Ropes and Safety Devices for Mine Shafts."

Session on Mechanical Loaders Underground

In the afternoon another meeting of the same kind will be held under H. F. Lunt's chairmanship. At this will be discussed "Mine-Fire Prevention," "Preparations for Fighting Mine Fires," "Industrial Psychiatry" (Jau Don Ball), "Industrial Relations of Tennessee Copper Co." (J. N. Houser, general manager of company) and "Industrial Community Problems at Brewster" (H. L. Mead, of the American Cyanamid Co.). Concurrently addresses will be made on the "Practical Results Obtained from Psychological Tests at Columbia." (Adam Leroy Jones), "Relations Between the Mining Industry and the Technical College" (F. W. McNair) and "Training of Engineering Students" (E. P. Mathewson).

The social luncheons so much appreciated in former years will be held on all three days with special dinners on the first night for three of the divisions, one of these being the industrial relations committee. These dinners will be followed by a smoker at headquarters. On the second day a dance will be held and on the third the reception to the Italian Ambassador at Washington, Prince Gelasio Caetani, which will be followed by the annual dinner. The business meeting will be held on Tuesday morning, Feb. 20, before the regular business of the day commences.

Proposed Legislation Prohibits Deduction Of Capital Losses Above 12½ Per Cent

DEDUCTION of capital losses in excess of 12½ per cent is precluded by legislation likely to be adopted at this session of Congress. The proposal is to amend the revenue act of 1921 so that a taxpayer may not be allowed a complete deduction of capital losses incurred. Both the revenue acts of 1918 and 1921 have left this gap through which many have escaped from income taxes.

It is pointed out that an injustice is done the taxpayer in that an increment frequently accumulated over a period of many years is taxed at a high surtax rate when the property is converted into cash in a given year. The net profit is arbitrarily attributed to the year in which the sale took place. In addition there was a severe restraint on sales at a profit. Many transfers of property were prevented when the transfer was highly desirable from the standpoint of economic development.

The act of 1921 provided that the tax on capital gains in the case of property acquired and held by the taxpayer for profit or investment for more than two years should be limited to 12½ per cent, but no such limitation was placed on capital losses. The injustice to the government is exemplified by Representative Mills of the Ways and Means Committee as follows:

"The taxpayer may refrain from taking his profits, or, if he does take them, he pays but a 12½ per cent tax, whereas he is at liberty at any time to take advantage of losses that may have been incurred and avail himself of a full deduction from his income. In the case of a man with an income of $350,000 a year, assume that he bought 5,000 shares of stock X in 1917 at par, and that he sells the shares in 1922 for $600,000, showing a profit of $100,000. By reason of this transaction, he would pay, in addition to the tax on his regular income, $12,500 to the government. But assume that instead of selling this stock at a profit he sold it in 1922 at a loss of $100,000. He then would be entitled to deduct the $100,000 from his income of $350,000 and the loss to the government by reason of that deduction would be $58,000."

In many cases, it is stated, only paper losses are involved. Securities may be sold at a price less than that paid for them, thereby setting up a loss which is deductible from income. After thirty days these same securities could be repurchased, or immediate purchase could be made of securities of a similar class and of the same value, which would allow the taxpayer a substantial loss for his income tax purposes, but his real financial position would be the same as before the sale.

Book Reviews

Modern Gas Works Chemistry

GAS-WORKS chemists seemingly are in the same unfortunate position as the mechanical and electrical engineers of coal mines. In "Modern Gasworks Chemistry," Geoffrey Weyman, chief chemist to the Newcastle on Tyne and Gateshead Gas Co., says: "Often enough the chemist is superimposed upon an existing organization and, without definite position or authority, is expected to show a substantial increase in economy. To the qualifications of training and ordered knowledge must be added, therefore, one of tact. The chemist is variously regarded as a nuisance, as a necessary evil to be tolerated as far as may be, as a sort of spy in charge of 'tell-tale' instruments or as an amusing trickster. In the long run he must trust to the result of his work to make his position one of reference by both workman and manager; until from being an excrescence, the laboratory takes its place as the nerve center of the works." If the word "chemist" were replaced by "electrical engineer" and "laboratory" by "switchboard" the statement would be scarcely less apt.

However, we cannot quite agree with Mr. Weyman in his enthusiastic dictum: "Could coal be so treated that the value of the byproducts would allow the gaseous therm to be distributed as cheaply as the therm in the form of raw coal, the increased efficiency with which the former may be used would render carbonization of extreme importance and would go far to stabilize the industrial conditions of this country" [England]. The reviewer may be pardoned surely for saying that the gaseous therm will not displace the therm in raw coal, for the electrical unit already is driving the latter out. Certainly gas is not going to oust electricity for power purposes, in general service, for nothing is so economical or so readily handled as electricity.

Still gas will continue to have its place, and this authoritative book will serve not only the chemist who makes gas but also the mine operator who must fit his product to the needs of those who desire to use it. And here it may be wondered that the author of this volume has so little to say as to clinker. He seems not at all interested in high-temperature fusibility and questions whether in the future the practice may not be to seek a low-temperature clinker that will run and not arch, obtaining this condition by the use of added fluxes. He believes that a clinker could be attained that would run through the fire bars into the ashpit.

He also questions whether it is better in the manufacture of producer gas to use a high fire temperature, completely burning the fuel and forming clinker, or to keep the fire comparatively cool and recover coke from the ashes, and concludes that this is a matter for individual consideration. This is indeed a new light on a problem which has been troubling coal men. Hitherto chemists have been urging that coal be used that, in burning, will leave at high temperatures only ash and not clinker.

The author's chapters deal with Coal, Carbonization, Coke, Maintenance of Heats, Refractory and Insulating Materials, Tar, Ammonia, Oxide Purification, Town Gas, Water Gas, Steam Raising and Water Supply and Lubricants. The treatise contains 184 pages measuring 7x9½ in. It has 42 illustrations and is one of the recent publications of Benn Bros., Ltd., 8 Bouverie St., London, E.C.4.

Unveiling the Romance of Coal Mining

IN A volume of 310 pages Charles R. Gibson has essayed, not without considerable success, to record "The Romance of Coal" and give a "popular account of the origin and nature of coal, the forces and qualities destructive or beneficial which lie latent in it and the great variety of uses to which they may be turned to science, art and industry." To those who are interested in the history of coal mining this book will greatly appeal. Mr. Gibson's qualification for his task is found mostly in his sense of the human interest in the subject he is considering.

A few of his statements are remarkable. For instance, in his chapter on "The Crust of the Earth" he declares that quartz is a silicate of alumina. As he recognizes sand as being coarse quartz he differentiates sandstone from clay and shale by saying that the particles in the latter are finer than those in the former. The reader of this review hardly will need to be told that sand is silica, or quartz, and that fireclay and shale are for the most part silicates of alumina, though fine particles of silica can be found in fireclay as in gannister clays.

Again in the chapter on "The Origin of the Varieties of Coal" he expresses the belief that anthracite has been formed by "great veins of igneous rocks being introduced among the coal beds," which is neither true in general nor happily expressed. He uses the word anthracite loosely, as is the English manner, saying that "its greatest field of labor has been in the Navy, because of its smokelessness," which is not true if the word "anthracite" is used, as he says, to cover coals which contain 93 per cent and upward of carbon. Coal so high in carbon as 93 per cent is indeed almost smokeless but is not used for naval vessels.

He also says that anthracite has little ash, which is true of the British product but is not necessarily true of all. Its freedom of ash where found is adventitious and not a quality to be expected. Anthracite must of necessity have a larger percentage of ash than the bituminous coal from which it has been formed.

The book admirably shows how the workers in the coal fields were the source of nearly all our industrialism, not only furnishing the power but devising and developing the steam engines by which industry operates. There is truly much romance in the industry that created the first railroads, the first steam locomotives and the first steam pumps and which has even today many unusual problems to surmount. Mr. Gibson faithfully and interestingly chronicles that romance. The book is issued by Seeley Service & Co., of London, but is republished by J. B. Lippincott Co., of Philadelphia. The pages measure 5x7⅝ in.

TESTS MADE AT THE PITTSBURGH (PA.) experiment station of the Bureau of Mines to determine the nature of gases rising from the fuel beds of different kinds of coke show that the composition differs very little. These tests will be continued to see if the combustibility of coke varies with the size of the pieces.

Problems of Operating Men

Edited by James T. Beard

Dumping Mine Cars by Rotation —Not a New Idea

Priority Claims Refuted — First Installation of Ramsay Patents in Alabama Ore Mines—35-Car Trip Dumped at One Time

SOME time ago, I recall reading an interesting article describing the installation of a skip hoist and rotary dump on the shaft bottom of the Zeigler No. 1 Mine, in Illinois (Vol. 21, p. 871). A brief item that appeared more recently in *Coal Age* (Vol. 22, p. 8), written by Clarence R. Claghorn, reminds me of the claims of priority set forth in the previous article, which it appears was written by E. W. Davidson. In this second reference, Mr. Claghorn makes similar claims of priority for a like installation at Wehrum, Pa.

In his brief article, Mr. Claghorn makes the claim that the Zeigler installation of the rotary dump and other equipment was patented after a similar installation, made underground, at the Wehrum (Pa.) shaft mine of the Lackawanna Coal & Coke Co., in 1903, both installations having been built by the same firm.

Development of Ramsay Rotary Damp and Later Installation at Zeigler, Ill.

During my service as division engineer of the Tennessee Coal, Iron & R.R. Co., in charge of its ore mines, for the years 1898 to 1900, inclusive, I was closely associated with Erskine Ramsay, chief engineer and assistant general manager of the same company. At that time Mr. Ramsay gave much thought to the study and development of the rotary dump.

Probably the first installation of this type of equipment was made at the Smythe Slope, Ore Mine, on Red Mountain, near Birmingham, Ala. That was a multiple five-car rotary dump of Mr. Ramsay's own design. About the same time and for the sake of comparison, he also installed, at the near-by Spring Gap Mine, the first slope, skip hoist in the state. The same was later adopted at many other Red Mountain mines.

Although the pneumatically operated Ramsay dump, at Zeigler, Ill., was not installed until 1917, the patent covering that installation (No. 701,764) was granted to Mr. Ramsay June 3, 1902. Mr. Ramsay had arranged with the Wood Equipment Co., who manufactured for him the earlier installations of this type of equipment, to allow the Car Dumper and Equipment Co., of Chicago, to manufacture and install the plant at Zeigler, Ill. Just here, it should also be observed that the patent covering the Zeigler installation was granted to Mr. Ramsay about a year prior to the application for the Wehrum (Pa.) patent mentioned by Mr. Claghorn.

From the foregoing statements it will be seen that the Zeigler installation is by no means the first rotary dump set up under the Ramsay patents. The idea of dumping material by rotary motion has been under development, now, for nearly a quarter of a century and Mr. Ramsay is one of the well-known pioneers in that development.

The Ramsay, rotary method of dumping an entire trip of cars in a single operation had its earliest practical demonstration, in coal mining, when a multiple, rotary dump about 175 ft. long and handling trips of 18 cars was installed, in 1914, by the H. C. Frick Coke Co., at its Lemont No. 2 mine, near Uniontown, Pa.

Other Installations of Ramsay Multiple Rotary Dumps in Pennsylvania

A little later Edward H. Coxe, then manager of the Tennessee C., I. & R.R. Co. and, now, general manager of Snowden C. & C. Co., installed a 28-car slope dump 275 ft. in length, the largest then in existence. This installation was made by Mr. Coxe, at this company's mines near Brownsville, Pa.

It will not betray any secret, I hope, to state that the H. C. Frick Coke Co. is about to install two Ramsay, rotary dumps, each having a capacity that will enable it to handle a 35-car trip at a single time. Each of these dumps will be nearly 400 ft. in length and located underground. The operation of dumping a full motor trip on its arrival at the station will require but ten seconds.

In this connection, it will be of interest to state that the first single-car, rotary dump, designed to dump one or more cars at a time without uncoupling the cars from each other or from the motor, was installed several years ago and operated, under a Ramsay license, by C. P. Perin, at his new Keokee Mine, Va.

In this type of dump, use was made of a swivel coupling that permitted the cars on the dump to turn over without being uncoupled from the trip. Numerous other dumps of this type have since been installed and are in operation in various parts of the country.

Many Installations of Same Dump in India

The C. P. Perin engineering firm of New York, which for many years has represented the great Tata coal, iron and steel interests of India are now installing a single, rotary, five-car dump made for them by the Ramsay agents, the Car Dumper and Equipment Co. of Chicago.

This dump is designed for a double-track slope, having the hoisting rope attached to the loaded and empty trips, respectively and passing backward and forward through the dump, the two branches of the rope running always in opposite directions. As in gravity-plane haulage, the two trips act in balance and the five cars in each alternate trip will be dumped at one time without the cars being uncoupled from each other or from the hoisting rope.

This installation will duplicate the one installed by the same company, in 1918, at the A. J. Morgan Coal Co.'s Bellaire Mine, in Ohio. I understand that this

novel arrangement is the only one of its kind in the world. The idea marks a great advance from the original swivel coupling of the Koekee Dump of which mention has been made. Previous to that time, the same firm had installed, in India, three other Ramsay dumps.

Pioneer in Mine Equipment

Through my long association with Mr. Ramsay, in the development of his rotary dump adapted to the varying conditions of shaft, slope and drift mines, I do not hesitate to say that he has made notable advances in providing various equipment that reduces the cost of production, by the increased efficiency effected in operation.

The numerous devices designed by Mr. Ramsay include mine cars, brakes, wheels and couplers, besides caging arrangements, individual mine-car samplers and various types of feeders for screens and crushers. His shaking screens date back to the first installation of that kind of equipment ever made at American bituminous mines. Such an installation was made by Mr. Ramsay himself, in 1890, at the Pratt slope, Mine No. 4 of the Tennessee C., I. & R.R. Co. H. A. Turner.

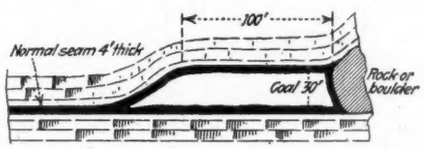
Birmingham, Ala.

Extraordinary Conditions Met in Working Coal Seam

Normal thickness of 4-ft. coal seam increases suddenly to 30 ft.—Conditions much disturbed in coal and roof —Coal entirely cut out by rock—No trace of seam beyond.

EXPERIENCES through which we have recently passed caused me to read the article of I. C. Parfitt entitled "Locating the Coal Beyond a Fault," *Coal Age*, Nov. 16, p. 799, and that of W. H. Luxton, Dec. 28, p. 1042, with the deepest interest.

My hope of finding in these articles the solution of a condition we have met in the working of a normally 4-ft. seam of coal in one of our mines in the southern part of Pike County (Ky.), was doomed to disappointment, however, as the conditions referred to in those articles were of an entirely different nature from those against which we have been striving for some time past.



EXTRAORDINARY THICKENING OF COAL SEAM

Conditions Before Boulder Cuts Out Seam

In a rough way, I have attempted to illustrate, in the accompanying figure, the conditions as we have found them. Previously, the coal, in our seam, had maintained a uniform thickness of 4 ft. and was overlaid with a hard slate top, the bottom being of a like nature. As indicated in the figure, we suddenly observed a rapid increase in the thickness of the coal, which continued till a height of 30 ft. was reached.

This thickening of the seam occurred within a distance of forty or fifty yards. Then, we ran into what appeared to be a huge rock boulder or horseback, which cut out the coal completely. To make the situation more clear I will explain that we have since driven all the places on the left of the main haulage roads and the main headings themselves up to and into this faulted condition.

In our efforts to ascertain the condition existing in the strata beyond, we not only drilled holes up in the roof and down in the floor of the seam; but have been prospecting on the other side of the mountain, about a mile ahead of the present development in the mine. The prospecting showed that what is probably the same seam of coal as that worked in the mine, outcrops about 20 ft. higher, in elevation, on the mountain, where it has a normal thickness of 4 ft.

I shall watch with interest for accounts of similar experiences of others, which I am sure will appear in these columns, together with some practical explanation of such an extraordinary thickening of the coal, before the seam was finally cut out by the rock.

Pikeville, Ky. Superintendent.

Stunt in Timbering Haulage Roads

Opinions vary in regard to the setting of temporary posts—Discussion brings out practical stunt to prevent a wreck on haulage road from dislodging timbers.

THAT post timbers have been set without taking proper care to insure the timber fulfilling its purpose and that this has proved the source of many accidents, will not be questioned by any practical mining man. While this introduces no new doctrine in mine timbering, it is strange to observe that many people hold varying opinions in regard to some of the simplest points in timbering.

I am led to make these remarks after listening to a discussion, by the members of a mining class, on the question of setting post timbers. The discussion developed the fact that some of the men present did not believe that special care was required in the setting of a temporary post. They argued that the arrangement was only temporary and would shortly be replaced by something better.

Temporary Posts Require Care in Setting

In order to bring about a thorough understanding of their viewpoint, every effort was made to explain clearly their meaning. Approaching the question from every angle, however, only brought the reply that "A temporary post is only a makeshift, and the taking of special care in its setting is a waste of time."

It is gratifying to know, however, that the greater number of the men present at that meeting were strongly in favor of setting even temporary posts with the same care that would be taken in the standing of permanent timber.

In support of this opinion, it was stated that "the same protection was expected of a temporary post as of a permanent timber, as long as the former was thought to be required." If that was not the case, it was asked, "Why set the temporary posts at all?"

Discussion Always Develops Good Points

A discussion always brings out some good points and this one, incidentally, led to the mention of a specially good piece of entry timbering, by a motorman whose experience caused him to view the subject of timbering from an angle that mostly interested those who, like

himself, had to haul the coal on the main roads and entries in the mine.

This motorman stated that, on two separate occasions, he had learned that it was possible for a wreck to occur where a branch entry joined the main road and cars were broken to pieces, while not a timber was dislodged by the cars thrown against it.

At that point, the two roads were joined by a long curve that made it necessary to set substantial ten-inch posts on each side of the road. Each heavy post was set in a foothold notched into the bottom. With some extra effort, a rounded bowl-like excavation was cut in the roof.

In the setting of each post four soft cap-boards were driven, above the post from the four points of the compass, north, south, east and west, whereby the post was wedged so firmly that the bump of a car from any direction could not dislodge the timber. All present agreed that the plan was a good one, whenever it was possible to cut the roof to the required bowl shape.

Pikeville, Ky. GEORGE EDWARDS.

Inquiries Of General Interest

Effect of Drawing Pillars on Production of Squeeze

Working the Miller or "B" Seam, in Pennsylvania—General Plan of Mine Outlined—Question of Drawing Pillars Discussed with Respect to Causing Squeeze.

IN THIS district, we are working what is known as the "Miller or B seam" of coal. The coal has an average thickness of about 3½ ft. and is overlaid with a fairly strong roof, and has a cover of about 250 ft. The bottom or floor of the seam is soft and wet, but there is no water in the roof. Throughout the district this coal lies fairly level with some local dips and rises.

The general plan of working adopted in our mine is to drive the main headings three abreast. The cross-entries or what we term the "panel entries" are also driven three abreast and are turned at right angles to the main headings. The room headings, however, are driven on the double-entry system and turned at right angles to the panel entries.

The room headings follow the general rise of the seam, as far as this is practicable. The rooms are turned as the headings advance, there being thirty rooms on each pair of headings. These thirty rooms form a panel and the question on which we desire the opinions of *Coal Age* and its practical readers has reference to the best method of working out a panel, in order to avoid as far as possible the occurrence of a squeeze.

In other words, I want to ask for an expression of practical judgment as to whether there will be less liability to develop a squeeze, by delaying the drawing back of the pillars in each panel of thirty rooms, until the panel is complete and the pillars can all be drawn back at the same time.

The system that has been employed quite generally is to draw back the pillars as quickly as the rooms reach the limit. The argument in favor of this plan is that the timbers and tracking in the rooms are then in good condition; but, owing to the soft, wet bottom, they are not liable to maintain this condition for any length of time. The experience of others in this regard will be greatly appreciated. ROBERT HOLT.

Indian Head, Pa.

In order to give the most intelligent answer to this question one should be thoroughly familiar with the conditions in the district, and know the effect of the soft, wet bottom on the life of the timber and tracking. Also, it is of equal importance to know the effect of drawing the pillars, in the locality in question. These effects can only be determined accurately by practical trial. Some mine water is more destructive of timber than others.

Again, the character of the roof formation in a mine will determine its action in hastening a squeeze. The depth of cover, stated in this case as about 250 ft., does not give sufficient information on which to base an opinion regarding the effect of drawing the pillars in the rooms.

The outstanding features of the information before us are the wet, soft bottom underlying the seam and the fairly strong nature of the roof above. Working under a cover of 250 ft. the roof pressure will be sufficient to force the pillars into this soft bottom. The effect will be all the greater with a fireclay floor owing to the water in the bottom swelling the clay. There is sure to be a tendency of the bottom to heave, in that case, and it can only be in part counteracted by increasing the ratio of pillar to opening, particularly when driving rooms.

For example, assuming the rooms are driven on 40-ft. centers, with a width of 24 ft. and 16-ft. pillars between them, there will invariably result a heaving of the bottom, which may be largely or wholly prevented by driving say 16-ft. rooms with 24-ft. pillars between them.

As stated previously this is a chief feature of the proposition here presented and outweighs, in importance, even the question of drawing back the pillars as the several rooms reach the limit, or delaying the work of robbing the pillars, till the panel is complete. Regarding that question alone and assuming the timber and tracking are not injured by the delay, to an extent that will require their being replaced, there will often be an advantage in drawing back the pillars in a panel at one time. Judging from the data afforded, however, we cannot advise this in the present instance.

Finally, taking everything into consideration, we would suggest turning and driving the rooms forward, in regular order, as the room headings are advanced; and drawing back the pillars as quickly as each room reaches the limit. Care should be taken, however, to keep the line of pillar work fairly straight, to prevent an undue pressure on the end of any pillar.

In the effort to avoid any tendency to squeeze or creep, in the working of this seam, the main points to be borne in mind are keeping the roads well drained and maintaining a sufficient ratio of pillar to opening that will reduce the roof pressure to a safe limit. This can only be determined by trial in the district. The aim should be to work out the coal and allow the roof to settle in the waste as quickly as possible. Large standing areas should be particularly avoided and regularity of work is likewise important.

Examination Questions Answered

West Virginia Mine Foremen's and Firebosses' Examination, Charleston, 1922

(Second-Class, Selected Questions)

QUESTION—*Name and describe the different systems of haulage with which you are familiar and state to what conditions each is best adapted?*

ANSWER—The several systems of mine haulage in use are the following: Mule haulage; different types of rope haulage and locomotive haulage. Mule haulage is used on the main roads, only in small mines, and for gathering the cars at the working faces in larger mines, the mule being better adapted for hauling cars under these conditions.

Rope haulage includes the following: (1) Gravity-plane haulage is where the descending loaded cars partly balance the ascending empties and no power is required to operate the system. (2) Engine-plane haulage is employed where it is necessary to haul the loads up an incline or slope, the engine being located either at the top or bottom of the incline. (3) Endless-rope haulage, is used where the cars are hauled in and out of the mine by means of an endless rope, which passes from the winding drum of the engine back to the tail sheave located at the inby parting, in the mine, and thence returning to the engine at the tipple. Both the loaded and the empty cars are attached by suitable grips, at regular intervals, to the rope that runs continuously. (4) Main-and-tail rope haulage is where two ropes are used to haul trips of cars in and out of the mine. The main rope extends from the winding drum of the engine at the tipple back to the inby parting in the mine where it is attached to the head end of the loaded trip. The tail rope, on the other hand, extends from the winding drum of the engine and, after passing over the tail sheave, at the inby parting, is attached to the rear end of the trip. By means of these ropes, alternate loaded and empty trips are hauled out of and into the mine.

Gravity-plane haulage is adapted to moderate inclines over which the loaded cars are lowered. Engine-plane haulage is adapted to steeper inclines and where the loads must be hoisted. Endless-rope haulage is adapted to large outputs of coal in generally flat seams. Tail-rope haulage is better adapted to undulating seams that are generally flat.

Locomotive haulage is adapted to large outputs in generally flat seams and on moderate grades. The locomotives are operated either by compressed air or electricity. An electrical locomotive may be either one of the trolley type that receives its power from the trolley line or storage batteries carried in the locomotive may supply the power, being recharged as required.

QUESTION—*(a) What is the area and perimeter of an airway 9x12 ft., in section? (b) If the volume of air in this airway is 72,960 cu.ft. per min. what is the velocity of the current?*

ANSWER—(a) The sectional area of the airway is $9 \times 12 = 108$ sq.ft.; the perimeter of the airway is $2(9 + 12) = 42$ ft.

(b) The velocity of the air current, in this airway, is $72{,}960 \div 108 = 675.55$ ft. per min.

QUESTION—*(a) Give the area and perimeter of an airway 6x13 ft., in section. (b) If the airway is 7,000 ft. long what is its rubbing surface?*

ANSWER—(a) The sectional area of this airway is $6 \times 13 = 78$ sq.ft.; and perimeter $2(6 + 13) = 38$ ft.

(b) The airway being 7,000 ft. long, its rubbing surface is $7{,}000 \times 38 = 266{,}000$ sq.ft.

QUESTION—*What condition could arise, in a coal mine that is ventilated according to law and employing 102 men, that would necessitate increasing the amount of air in circulation, without increasing the number of men employed?*

ANSWER—The gaseous condition of the mine air may increase to an extent that would require a larger circulation of air, in order to dilute, render harmless and sweep away the gases generated. It is not sufficient to gage the volume of air in circulation by the number of men employed, alone. The quality of the air, as determined by the percentage of oxygen present, must also be considered. The presence of mine fires existing in the gob or waste areas, in a mine, consume the oxygen of the air and increase the quantity required for the ventilation of the workings.

QUESTION—*(a) What are the effects of windy or blownout shots? (b) What precautions would you take to prevent them?*

ANSWER—(a) A windy shot is one where a portion of the powder forming the charge is blown from the hole and exploded in the air, causing a sharp concussion of the air in the mine workings. In that case, an excessive charge of powder was used, the amount being more than that required to break down the coal.

A blownout shot, though producing more or less the same effect in the mine air, differs from a windy shot by blowing its tamping and not breaking down the coal. In this case also, a portion of the powder is exploded on the air producing the same concussion of the air in the workings.

(b) To prevent the occurrence of a windy shot, the excessive use of powder must be avoided. Experience will generally determine the weight of charge required to perform the work desired. Again to prevent the occurrence of a blownout shot it is necessary to locate the charge in such a position in the coal that the line of least resistance, as measured from the charge to the free surface of the coal, is less than the depth of the hole. The charge must be well tamped, and only permissible powder should be used.

QUESTION—*Specify the conditions which must be fulfilled in order to secure good ventilation in a mine.*

ANSWER—In the first place, the quantity of air in circulation must be at least equal to the requirements of the mining law. Secondly, the volume of air entering the mine must be divided into two or more separate splits, as conditions may require. Each air split is made to ventilate a separate section of the mine and returned to the main air-course, without passing into other sections. The velocity of the air at the working face, in each split, must be sufficient to sweep away the gases that would otherwise accumulate therein. The velocity of the air current at the face should not exceed 6 ft. per second and will often be less to insure the comfort of the workers.

How the Coal-Mining Industry in the Saar Basin is Governed

By C. H. S. Tupholme

NO DESCRIPTION or statement on the conditions or control of the coal mines in the Saar area can be appreciated or is complete without reference to the somewhat hectic history of the neighborhood. This is important because the Saar basin has a political and industrial position which is immensely significant both in France and Germany. The basin had always been French until 1815, when, after Napoleon's defeat at Waterloo, it was given to Germany, the French eastern boundary being pushed west to the Alsace-Lorraine line. Much argument centered round this point after the last war and eventually the rich coal area of the Saar was taken over by France.

A somewhat complex administrative situation exists in the Saar basin owing to the existence of the Saar Governing Commission. This commission owes its existence to a ruling of the League of Nations and operates entirely independently of either the French or the German government. It is indeed invested with the entire governmental authority which would otherwise be exerted by the French or German government, until 1935, when the inhabitants will have the opportunity to decide whether they will assume French or German nationality or will continue to be hybrids under the League of Nations.

Contrary to a somewhat popular idea the Saar Governing Commission has very little indeed to do with the actual administration of the coal-mining industry of the Saar Basin. Its influence is evident, however, in matters directly affecting the industry. For instance, the Saar Governing Commission has made itself actively responsible for the erection of working-class dwellings, many of which will be occupied by the coal miners.

Responsibility for the actual operation of the coal mines in the Saar area rests with the French Mining Administration, which, by the Treaty of Versailles, is invested with certain peculiar rights. Thus, though the 75,000 workers are almost entirely of German extraction the French Mining Administration has the right to circulate French currency to any extent it wishes. Consequently all projects undertaken in the Saar area are financed in francs and materials and labor are paid for in French coinage. But, in spite of this, German marks also are in circulation. The result is obvious: All kinds of peculiar economic and political situations have arisen.

Germans Glad to Receive Pay in Francs

Naturally, the German coal miner in the Saar has no objection to being paid in francs. Compared to his brother in the building trade he is very well off, and the deeper the mark goes into the mire, the greater is the satisfaction of the German coal miner who is paid in francs.

This policy of the introduction of the franc as the official basis of currency in the Saar cuts both ways. With the gradual decline in the value of the mark this policy means that the German industrial operator cannot afford to buy Saar coal. Consequently there has been a marked fall in production under the French system of control. Instead of an output of around 15,000,000 tons per annum, which was the output under German administration in 1913, the present production is under 10,000,000 tons, and it is likely to fall still further if no factor enters to counteract the effect of the fall in the value of the mark.

The government of the Saar Basin coal-mining industry by the French Mining Administration may have its drawbacks from the German point of view, but to an unprejudiced observer there is no cause for complaint. The present administration has raised individual output from 500 to 600 kilos per day and the workers in the mines are contented. The industry, in fact, is in a healthy condition and unemployment is practically nil. Moreover, the Saar is immune from the penalties imposed by the Allies on Germany proper. Consequently the Saar miners are in no way contributing toward German reparations and the finances of the district are in an extremely healthy condition. Likewise the Saar coal industry has, so far, escaped the trade and industrial depression of Britain, America and the rest of the world; it is quite content to be left as it is and conduct its financial transactions under French authority through the medium of the franc.

The transference of the Saar coal-mining industry from Germany to the control of the League of Nations was brought about chiefly through the representations of France, who urged that the wanton destruction by Germany of the great coal fields around Lens and the other northern districts entitled her to reparation in kind. Before the war France was compelled to import coal to satisfy her home requirements, and the destruction of her important coal areas involved, judging by pre-war needs, a loss of around 40 per cent of her total output. In fact so convincing was the French argument at the Versailles Conference that had she substantiated a claim for sovereignty over the Saar Basin this important area would undoubtedly have been turned completely over to France.

The normal industrial conditions in France do not warrant the employment of the total possible output of the Saar Basin. This area covers about forty large mines, and it is estimated that the seams hold now about three billion tons of coal. The Saar industries consumed only 30 per cent of the pre-war output so that a very large quantity was available for export. Of the total exportable surplus of 10,000,000 tons, 2,000,000 tons went to France, 1,000,000 to various destinations in Europe, and the balance to Germany.

The French Administration has endeavored to counteract the effect of the depreciation of the mark by procuring for Saar coal favorable railway rates. To some extent this has been successful. The establishment of publicity bureaus in various industrial centers also has aided.

Fewer Mining Accidents in Great Britain, But U. S. Ratio to Output Is Lower

Coal mines of Great Britain employ about a million men each year, or approximately one-third more than the number employed in the United States, according to W. W. Adams, statistician of the U. S. Bureau of Mines. The yearly output of coal is around 300,000,000 tons, less than half the production in the United States. Fatal accidents vary in number from 1,100 to 1,200 per year; in 1920, the latest year available, the number was 1,103. In the United States the fatalities vary from 2,000 to 2,500 per year. In a day's work the British miner produces less than one-third as much coal as the quantity produced by the American miner in the same length of time.

Differences of conditions in the two countries make it difficult to compare the frequency of mine accidents, but accepting the record as it stands, the British accident rate for every 1,000 men employed varies from 1 to 1.30, while in the United States it is from 3.90 to 4.60 each year. The relative number of accidents due to any given cause in the mines of Great Britain is not materially different from that in the United States; that is to say, about half of all fatal accidents in the British mines result from falls of roof, just as in this country. The accident rate, however, in relation to the number of men employed is consistently below the rate in the United States. In Great Britain three miners produce no more coal in a day than one in this country.

It would be difficult to account completely for the lower rate in the British mines, but among the factors to which the lower rate may doubtless be partly attributed are the experience possessed by the miners in Great Britain, many of the men having been bred to the occupation through several generations; the slower speed with which the men work as indicated by the smaller daily output per man; the use of a common language so that safety instructions may be understood; the less extensive use of machinery, only about 13 per cent of the British coal being undercut by machines as compared with over 50 per cent of the bituminous coal produced in this country; greater caution in timbering at the face, and shale dusting of the mines to reduce the probability of explosions. In Great Britain the use of shale dust is required by law.

Shortage of Shipping Facilities Now Chief Factor in Russian Coal Situation

RUSSIA'S chief source of coal always has been the Donetz Basin, which lies just north of the northeastern projection of the Azov Sea. It is situated in the immediate vicinity of the rich iron ore mines of Krivoi-Rog and also happens to be the only source of production, in all Russia, of metallurgical coke. It has large deposits of anthracite, the output of which in 1913 formed 18.9 per cent of its total production and, according to *Commerce Reports* (issued by the U. S. Department of Commerce), was rapidly mounting from year to year.

Next in importance are the mines of the Ural, which likewise produce a small quantity of anthracite, and the Moscow Basin, which, although centrally located, produces only lignite. Mining of the extensive and easily accessible deposits of black coal of the Kuznetsky Basin and Tsheremkovo, in western Siberia, was only begun, more or less intensively, after the outbreak of the war. Of minor importance are the Turkestan fields and those of Borovichi, in the Novgorod Province, where low-grade soft coal is produced.

In 1919 the total production of coal in Russia was 23 per cent of that of 1916, and in 1920 the proportion was 20.5 per cent. The comparison of the 1920 output of the principal mining districts with the output for 1916 shows the lowest ratio, 16 per cent, for the Donetz Basin. The Ural mines came to 62 per cent of their 1916 yield, Siberia gave 63 per cent, Turkestan 82 per cent, and the Moscow district 87 per cent.

According to Bolshevik official periodicals the comparatively high level of output maintained by the Ural district under the present régime is accounted for by the fact that the Tshelyabinsk lignite mines, at present furnishing over one-half of all the Ural coal, consist principally of surface layers, averaging 28 ft. in thickness, and these are being stripped without any attempt at conservation.

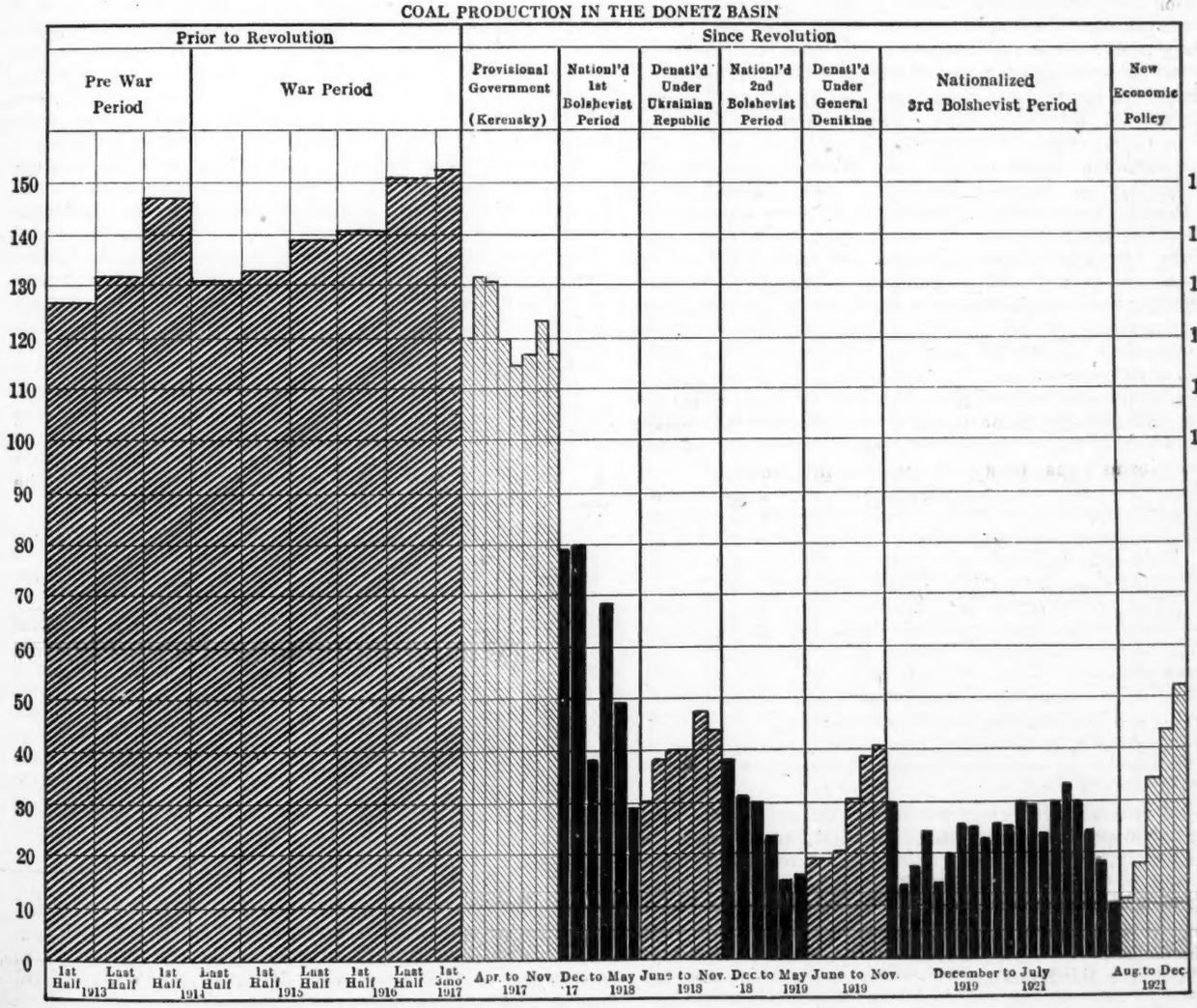
In the Moscow region the coal is found in pockets, and the mining industry is scattered among a large number of small concerns, with more or less primitive equipment. The work of these small plants was not affected by the industrial revolution to as great an extent as mines worked on modern intensive lines.

From 86 per cent of Russia's total output in 1914, the Donetz output dropped to 75 per cent in 1918, 64 per cent in 1919, and 55 per cent in 1920. In the first nine months of 1921 its output averaged 60 per cent of the total. The variations of the Donetz output are traced in the appended chart. The figures in the chart represent gross production, from which the consumption of the mines themselves must be deducted. Production figures are shown in millions of poods (62 poods = 1 gross ton).

Soviet Restores Unified Administration

In July, 1921, a marked change in methods was resorted to by the Soviet Government. Although but few mines were restored to private exploitation, a system of centralized and unified administration was restored in the nationalized mines, with unlimited authority placed in the hands of the chief administrator. The managerial staff and the experts were afforded a liberal remuneration for their services and a proportionate bonus on the tonnage output. Above all, the system of equalized wage payment, in the form chiefly of uniform rations, was discarded and a graduated system of direct output pay, on a sliding scale, introduced in its stead for all hands. The effect of the new

COAL PRODUCTION IN THE DONETZ BASIN



economic system was important and is worthy of some detail, as shown in the following table:

PRODUCTION OF COAL IN DONETZ BASIN AND NUMBER OF LABORERS EMPLOYED IN MINES, JULY-DECEMBER, 1921.

	Production in thousands of poods.(a)					
					Men employed	
Months	Black coal	Anthracite	Total	Net	Hewers	Total
July	9,600	(a)	9,600	500	(b)	107,500
August	9,300	2,000	11,300	3,290	9,000	107,140
September	15,280	3,100	18,380	9,910	9,340	93,640
October	25,600	9,400	35,000	24,700	11,700	97,200
November	29,500	13,500	43,000	24,600	12,900	106,000
December	35,920	17,130	53,050	34,050	14,660	116,300

(a) Sixty-two poods = 1 gross ton. (b) Not reported.

A decline in output, however, occurred in January, the gross production, which had been 53,000,000 poods in December, falling to 38,000,000 poods.

The increase in the production of anthracite during the latter part of 1921 is noteworthy. It formed about 32 per cent of the December production. The percentage of anthracite output to the total coal production of the Donetz Basin during the latter part of the year was: August, 18 per cent; September, 18 per cent; October, 28 per cent; November, 31 per cent; December, 32 per cent.

Additional light is thrown on the above figures of the net output by the fact that 700 coal pits were worked in July, while in November the production was concentrated in 281 pits, with 49 more pits slated for shutdown as soon as available supplies were exhausted. This concentration of work in the best equipped pits was dictated not alone by the scarcity of skilled labor but by the acute shortage of mine props and beams, coal-cutting machines, electric armatures and steel.

Output Per Man Still Below Pre-war Level

The per capita productivity of labor in general. both surface and underground, while greatly increased under the stimulus of the output pay (from 81 poods per month in July to 450 poods in November), still runs far below the pre-war level of 750 poods per month. The proportion of coal hewers to the total personnel was 25 per cent before the war. It was only 8 per cent in August, 1921, but rose to 12 per cent in November.

An important factor in the coal situation at present is the shortage of shipping facilities. Coal is piling up in the Donetz Basin—only 13,700,000 poods were shipped out in October, the November shipments were 16,000,000 poods, and the December shipments about the same. The stocks on hand on Dec. 1, 1921, amounted to 78,600,000 poods—23,400,000 poods of bituminous coal and 55,200,000 poods of anthracite. On Jan. 1, 1922, stocks on hand were 98,200,000 poods—33,100,000 poods of soft coal and 65,100,000 poods of anthracite.

The total output of coal from the Russian fields increased from 1,947,000,000 poods in 1914 to 2,101,000,000 in 1916, since which time, however, there has been a steady decline.

TOTAL PRODUCTION OF RUSSIAN COAL FIELDS

(Millions of Poods)

Districts	1914	1916	1917	1918	1919	1920	First Nine Months of 1921
Donetz Basin	1,684	1,752	1,516	537	325	278	196.8
Ural district	84	92	98	37	44	57	45.12
Moscow district	18	42	45	23	22	37	31.18
Turkestan and Caucasus	13	15	13	6	11	10	(a)4.67
Borovichi	...	...	...	...	...	2	0.67
Eastern Siberia	88	118	113	53	33	30	...
Western Siberia	60	82	94	56	51	52	49.8
Totals	(b)1,947	2,101	1,879	712	486	(c)466	328.24

(a) January to October, inclusive.
(b) Exclusive of Dombrova (Poland) mines, lost by Russia in 1914.
(c) The total for 1920 was reported to mining conference at under 431,700,000 poods (Economic Life No. 287, 1920.

Total production during the first quarter of 1921 was 114,900,000 poods and rose to 141,300,000 poods during the second quarter; in the third quarter, however, the production fell to 72,000,000 poods. The output of the Donetz Basin was principally responsible for this heavy fluctuation, rising from 72,000,000 poods in the first quarter to 85,000,000 poods in the second quarter and declining to 39 000,000 poods in the third quarter.

Owing principally to lack of transport, the stocks of coal in the Donetz Basin were accumulating rapidly—from 790,000 long tons in October, 1921, to 2,000,000 tons on April 1, 1922, representing between 200 and 300 per cent of monthly output as against 10 to 15 per cent in pre-war times. The average monthly output from the Basin for the first quarter was 642,000 tons, as against 855,000 tons in December, and a monthly average in 1916 of 2,355,000 tons. Because of the scarcity of bread, miners were leaving the district. The number of men employed in state-worked mines declined from 118,690 in January (including 14,980 coal hewers) to 94,460 in March (including 10,442 hewers).

Production has been fluctuating from month to month, but on the whole the output of state-worked mines has been receding from the high-water mark set in December, 1921—855,000 gross tons. In May the smaller leased outfits passed under control of the Central Coal Administration of the Donetz Basin.

The total gross production at the state mines of the Donetz for the first seven months of 1922 was as follows: January, 645,160 tons; February, 653,230 tons; March, 637,100 tons; April, 424,190 tons; May, 443,550 tons; June, 512,900 tons; and July, 361,400 tons.

The steady decline in the output of coal is attributed chiefly to the exhaustion of funds and supplies in kind for payment of wages, and consequent migration of skilled labor. The proportion of skilled coal breakers to the rest of the man power in the Donetz Basin declined from 13 per cent of the total number of mine workers in January, 1922, to 9.7 per cent in June, last.

How Many Working Days in a Year?

OF THE 365 days in the year, 52 are Sundays and 7 usually are celebrated as holidays. This leaves a working year of approximately 306 days. The average number of days per year worked in the anthracite collieries during the past ten years amounted, however, to only 260. Thus, out of the possible working time, an average of 46 days annually were lost. A report on idle time prepared by one of the coal companies as the result of study of this problem in its own collieries in the Southern field is pertinent.

During the year 1921 a total of 31½ days were lost, exclusive of Sundays. This lost time is accounted for as follows: The colliery was closed on 7 national holidays; there were 10 days of religious celebrations at various times throughout the year; April 1 is a holiday among the United Mine Workers generally, in commemoration of the granting of the eight-hour day in the soft-coal region. Mitchell Day, Oct. 29, also is celebrated by the mine workers as a holiday. Strikes closed the collieries on two days, due in one case to the appearance of non-union workers in the mines and in the other case to a complaint against retail prices charged employees for their coal. A further loss of 3½ days was occasioned by miscellaneous causes, namely, a snowstorm, a Russian and Polish picnic, Old Home Week celebration, and Election Day. Out of the 31½ days lost, the remaining 7 days of suspension were due to market conditions.

Saints' days and holidays generally mean two days' absence instead of one for foreign workers, according to those familiar with the habits of the people, as such times are occasions for long celebration and feasting. Often, also, the work of the collieries has been crippled to the extent of a day's shutdown when the entire mining force has quit work to attend the funeral of a fellow worker. So many times did this happen at one colliery that an agreement with the grievance committee of the mine workers was reached whereby a delegation was to be sent from the colliery at the expense of the company while the other employees remained at work. In another instance the company paid $150 additional compensation to deceased miners' families in lieu of attendance of former co-workers at the funeral.

COAL AGE INDEX

The indexes to COAL AGE are furnished free to all who ask for them. The index for the last half of 1922 will soon be ready for distribution. A copy can be had by addressing a postcard to the subscription department of COAL AGE.

Coal Commission Plans Study of Coal Storage; Believes Mine Storage Advantageous

By Paul Wooton
Washington Correspondent of *Coal Age*

The President's Coal Commission may take credit for a great diplomatic victory. At the New York meeting the operators and the mine workers, in agreeing to maintain the status quo for one year, did exactly what the commission requested them to do, although it has been revealed since that the commission was prepared to advocate an extension of the existing agreement for two years. Chairman Hammond explained that the commission, on considering all phases of the situation, had reached the conclusion that a two-year agreement would be better than one, since it would allow time for Congress to translate into legislation any recommendations that the commission might make before it would be necessary to reopen wage negotiations. Since only a one-year agreement has been reached, the commission will try to speed up its work so as to have its conclusions in final form at an earlier date than had been expected, thereby making available its recommendation in time for public opinion to crystallize and still give Congress an opportunity to act before April 1, 1924.

Some may contend that the commission in interposing itself into the wage negotiations was playing with fire, but that it had the good fortune to escape burning. Whether or not it simply is a matter of good fortune, it is evident that the public gives the commission credit for having prevented a strike on April 1 and the joint conference of mine workers and operators in its communication sent to the President, the Attorney General and to the commission declared that the action was taken upon the "urge" of the commission.

Had the operators or the mine workers been disposed to do so, they could not have been blamed had they called on the commission for advice as to the legality of an agreement. Other questions might have occurred to them which well might have resulted in an embarrassing situation for the commission. By sheer good fortune this did not happen, and as a result the Coal Commission suddenly has attained an enviable standing in the public esteem. This prestige is expected to increase greatly its power for usefulness.

While some embarrassment might have been entailed in ruling concretely on the legality of such an agreement, it is apparent that the commission regards such an agreement as was reached in New York as violative of the Sherman law in no particular. Had the commission entertained any such doubt, it would not have urged the conferees to reach an agreement. At any rate, Chairman Hammond believes that any danger of indictment is precluded by the fact that the action was taken at the direct request of the commission. In that connection, however, he called attention to the fact that the commission has no power to set aside a law or to give anyone an immunity bath.

The commission seems to have been able to discard the Jonah which has so persistently followed others who have attempted coal mediation. The late F. S. Peabody and the late Franklin K. Lane, flushed with what they thought was a wonderful achievement, were spectacularly humiliated by the war administration in their efforts to compose a bad situation in coal. Fuel Administrator Garfield became the goat of the combination of adverse circumstances.

The Federal Trade Commission tried taking a hand in coal affairs and became involved in a famous quarrel, resulting in its powers being denied by the courts. The Robinson commission gave a big increase in wages to the miners and was grilled by the operators and even by the mine workers. Vacation strikes followed the anthracite ruling in 1920.

Secretary Hoover negotiated a voluntary agreement, without powers or money, which saved the consumers of coal many millions. As a result, he was assailed as abetting profiteers and did not even have the satisfaction of receiving a single expression of thanks from the consumers, whom he benefited so greatly. Fuel Distributor Spencer was criticized bitterly because he could not repeat the miracle of the loaves and the fishes and make twenty cars of coal out of one. The Interstate Commerce Commission has had troubles galore as a result of its priority orders.

In spite of the bad luck which has pursued everyone who has touched coal, it has remained for John Hays Hammond and his associates, all but two of whom are admittedly amateurs so far as any highly specialized knowledge of the coal industry goes, to draw commendations where equally earnest efforts before have drawn only criticism. In discussing the situation after the New York agreement, Chairman Hammond said that one of the immediate results in the public interest would be a decline in coal prices. Had uncertainty as to the outcome of the negotiations continued until in March, much higher prices would have prevailed, he believes.

Mr. Hammond made it clear that the commission is of the opinion that the railroads could contribute greatly to the public good by storing the maximum possible proportion of their requirements during the period of open-top car surplus. From the trend of his remarks, it is apparent that the commission has little patience with the practice of the railroads in commandeering coal. Apparently the commission has in mind a recommendation that no coal be commandeered without permission of the Interstate Commerce Commission, and even then settlement must be made upon the basis of damage done the consignee, when such damage follows confiscation.

Would Encourage Tidewater Movement

Mr. Hammond's remarks also indicate that the commission is attaching great importance to the whole matter of storage, including certain limited storage at the mine, which will give greater flexibility to operation. Another remedial proposition to which the commission attaches importance was revealed to be special inducements to encourage tidewater movement during the period of car plenitude.

The commission had planned to begin public hearings during the latter part of January. It has been found in the informal conference, however, that much more progress is made when the commission has facts at hand with which to check expression made to it by those appearing. For that reason public hearings will be delayed until the fact-finding activities have progressed further. This will tend to prevent speculation on the part of witnesses and will furnish a concrete basis for expressions of opinion.

Among the things which the commission has in mind for early study is the matter of absenteeism, the check-off and the relative advantages and disadvantages of unionized and open-shop operation of mines. More attention now is to be turned to the anthracite situation. Before the time comes for signing the new agreement in the anthracite field, Mr. Hammond promises complete data for the guidance of the conferees. Among the things which the commission expects to study exhaustively is the matter of royalty charges on anthracite lands.

The commission has no intention of considering the advisability of prohibiting anthracite exports. It regards this as falling squarely within the jurisdiction of the Federal Fuel Distributor. In that connection it may be mentioned that the agitation in Congress on the part of certain New England legislators for the cutting off of anthracite shipments to Canada is getting nowhere. An effort to obtain even a committee hearing on the subject has been denied. If the anthracite exported, Secretary Hoover points out, were translated into the power it represents, it would be found that Canada is giving us as much electric power as is represented by anthracite exports. In addition, the Northwest uses some British Columbia coal.

Form Coal Mining Institute at Johnstown To Prevent Mine Accidents

With the primary object of accident prevention in coal mines, nineteen leading coal operators and others interested in accident prevention met in Johnstown, Pa., last week and formed an organization to be known as the Pennsylvania Coal Mining Institute of Johnstown. The institute promises to develop into an important factor in the industrial activities of central Pennsylvania.

D. L. Boyle, general superintendent of the Penelec mines, was elected president; W. A. Swift, of the coal-mine section of the Pennsylvania compensation rating and inspection bureau, vice-president; William Fleming, mine foreman for the Tunnelton Coal Co., of Ferndale, secretary, and Vincent Stanton, of the Mine Safety Appliance Co., of Pittsburgh, treasurer.

Following the election, President Boyle appointed the following committee as a board of directors: Charles Frederick, Pat Fraer, Vincent Stanton, W. E. Martin, J. G. Jones, John Reed, James T. Gatehouse and Ray Joseph. A constitution and by-laws will be formulated by the following committee appointed by President Boyle: J. G. Jones, John Reed, Pat Fraer, Charles Frederick, Vincent Stanton, William Fleming, T. J. Davies, W. A. Swift and D. L. Boyle. It was decided that the nineteen men present be recorded as the charter members of the institute, as well as those who attend the second meeting, which will be held in Johnstown on Feb. 16. With no like institution nearer the central Pennsylvania field than Pittsburgh, the organizers look for big things through the new organization.

Pennsylvania Coal & Coke Corporation to Distribute 40-Per Cent Stock Dividend

A 40-per cent stock dividend was declared Jan. 26 by directors of the Pennsylvania Coal & Coke Corporation, payable to holders of record Feb. 3, 1923. The par value of the stock remains as at present, $50 a share. In addition, the board declared a cash dividend of $1 a share, payable Feb. 10, 1923, to stock of record Feb. 3. The cash dividend will be paid upon both the present and outstanding capital stock and on the additional stock to be issued as a stock dividend.

Several changes in the personnel of the company also were announced. John H. Lang and C. H. Memory resigned from the board, and Fairfax S. Landstreet, Joseph P. Ripley, George H. Walker and C. Law Watkins were added to the board. Fairfax S. Landstreet was elected chairman of directors. Messrs. Landstreet, Walker, Watkins and J. W. Searles were chosen for the executive committee.

Explosives Sales, January-November, 1922 Exceed Those of Preceding Year

Sales of explosives in the United States during November, reported to the U. S. Bureau of Mines by manufacturers representing about 90 per cent of the industry, amounted to 715,144 kegs of black blasting powder, 4,615,944 lb. of permissible explosives, and 17,574,902 lb. of other high explosives.

Sales of black powder represent a gain of 36 per cent over the record for November last year. During the eleven months from January to November, inclusive, 5,440,487 kegs of black powder were sold for use in the United States. This was practically the same as the quantity sold during the first eleven months of 1921, but it represents a loss of 45 per cent from the corresponding months of 1920. The coal-mining industry used 84.6 per cent of the black powder sold during the eleven-month period of 1922.

Sales of "permissibles" represented an increase of 42 per cent over November, 1921. The total quantity sold during the first eleven months was 34,404 321 lb., an increase of about 2 per cent over the corresponding months of 1921 and a reduction of 30 per cent from the eleven-month period of 1920.

The November sales of high explosives other than "permissibles" were 49 per cent more than the sales reported for November last year. During the first eleven months of 1922 sales of high explosives totaled 166,090,464 lb., an increase of 18 per cent from the eleven-month record for 1921, but a reduction of 16 per cent from the corresponding months of 1920. Coal-mining operations used 11.5 per cent of the high explosives sold from January to November, 1922.

Lists State Laws on Coal-Cutting Machines

Coal-cutting machines, according to a recent tabulation of the U. S. Bureau of Mines, are in use in 3,895 mines in the United States. These mines have in use 20,034 machines, 17,875 being operated by electric motors and the remainder by compressed-air motors. On account of the wide use of coal-cutting machines, many states have issued regulations as to their operation and as to safety precautions that should be observed, especially in gaseous mines. A compilation of rules and regulations issued by different states covering coal-cutting machines or trailing cables used with them is given in Serial 2419, "Regulations Safeguarding Coal-Cutting Machines," which may be obtained from the U. S. Bureau of Mines, Washington, D. C.

Retail Food Prices Up 1 Per Cent

There was an increase of 1 per cent in the retail cost of food to the average family in December as compared with November, according to the retail food index issued by the U. S. Department of Labor, through the Bureau of Labor Statistics. The index numbers based on 1913 as 100, were 145 in November, and 147 in December, 1922.

During the month from Nov. 15, 1922, to Dec. 15, 1922, 19 articles on which monthly prices are obtained decreased in price, while eighteen articles increased in price.

For the year period Dec. 15, 1921, to Dec. 15, 1922, the decrease in all articles of food combined was 2 per cent. For the 9-year period Dec. 15, 1913, to Dec. 15, 1922, the increase in all articles of food combined was 41 per cent.

Between Nov. 15, 1922, and Dec. 15, 1922, the average family expenditure for food increased in 41 cities. In eight cities there were decreases, while two cities showed no change over the preceding month.

For the year period Dec. 15, 1921, to Dec. 15, 1922, 44 of the 51 cities showed decreases. There was an increase shown in 7 cities.

Class 1 Railroads Consume 9,260,000 Tons Of Coal in October, at $4.27 per Ton

Class 1 railroads consumed 9,260,000 net tons of coal during October, 1922, as charged to account 394, compared with 8,654,000 tons in October last year, according to a report of the Bureau of Statistics of the Interstate Commerce Commission covering 177 steam roads. For the first ten months of 1922 these roads consumed 76,036,000 tons as compared with 75,873,000 tons during the corresponding period in 1921.

The delivered cost per ton in October was $4.27 or 56c. above that for October, 1921. The per-ton cost for the year to Oct. 31, however, was only $3.98, as compared with $4.19 during the corresponding period of 1921.

Fuel-oil consumption continues to gain. During October 154,638,000 gallons were used, as compared with 133,310,000 gallons in October, 1921. The figures for the first ten months of 1922 and of 1921 were 1,251,925,000 and 1,176,251,000 gallons respectively.

GREAT THINGS ARE EXPECTED when farmers and labor unions get together. (The accent goes on "when.")—*Philadelphia Evening Public Ledger.*

THE NEXT THING these union leaders will be doing is pointing to the dictionary to prove that wages must be hire.—*Manila Bulletin.*

Ellis Searles Attacks Mine-Nationalization Plan as Work of "Greenwich Village Coal Miners"

Charging that "Greenwich Village coal miners" were largely responsible for the so-called nationalization plan recently published in pamphlet form by a committee of the United Mine Workers headed by John Brophy, Ellis Searles, editor of the *United Mine Workers' Journal*, issued a statement on Monday, Jan. 29, asserting that the plan was not the plan of the organization but merely the views of the members of the committee. The committee, according to Mr. Searles, was appointed to submit a report to the convention of the United Mine Workers next January. Instead of doing so, the plan was made public prematurely, he declared, at a meeting of radicals in New York City, and published as a booklet entitled "How to Run Coal."

Following the issuance of Mr. Searles' statement, C. J. Golden, of Shamokin, Pa., president of District No. 9 of the United Mine Workers of America, a member of the committee, made public a statement defending the report and at the same time gave out for publication a letter dated Jan. 27, addressed to John L. Lewis, International president of the miners' union, in which he says he was surprised when informed that it was not within the duties of the Nationalization Research Committee to give publicity to the findings of that body and also resigns as a member of that committee.

Mr. Searles' statement which resulted in the controversy follows:

"There appears to be a misunderstanding on the part of newspapers and the public in regard to the plan for the nationalization of coal mines, which was announced at a recent meeting held in New York. Apparently there is a general understanding that the plan is, in fact, the plan of the United Mine Workers of America. This is not correct. The plan as set forth at that meeting by a committee of the miners' union is the plan only of the members of that committee. The report of the committee has not yet been presented to the national convention of the United Mine Workers of America for consideration. What action the convention next January may take on the subject is, of course, unknown. The national convention held in 1921 adopted a resolution indorsing the principle of nationalization of mines and created a committee to study the question with a view to the preparation of a practical and workable plan. But the convention did not commit the union to any particular form or plan of nationalization.

Says Plan Was Proposed at Meeting of Radicals

"Unfortunately, the plan proposed by the committee was prematurely made public at a radical meeting in New York, and this fact has caused the public to believe that the United Mine Workers of America is committed to the particular plan set out in the report. The fact is the outline submitted by the committee was merely a tentative proposition and the committee has not claimed that it is a definite declaration by the union. We are informed that it was, in part, prepared for the committee by some well-known New York radicals who have no connection whatever with the coal-mining industry. While the report may, perhaps, represent the views of these Greenwich Village coal miners, the public should not accept it as a proposal of the United Mine Workers of America unless and until it has been officially affirmed and adopted by the national convention which will be held next January."

Defending the action of the committee in making public the report of the committee, Mr. Golden reported that the "Greenwich Village reds are the same people" who are the "most progressive friends the United Mine Workers have." Mr. Golden, in his statement, says in part:

"I have read the attack by Mr. Searles in which he openly condemns the League for Industrial Democracy, the Nationalization Research Committee and the proposed plan for nationalization of the coal mines made public by the committee as a basis of intelligent discussion.

"Mr. Searles is not a member of the United Mine Workers, knows practically nothing about the mining industry, has not the least conception of what the miners of the country want. He does not remember that four years ago by unanimous vote in the Mine Workers' convention the officers of the Mine Workers were instructed to draft a bill and present it to the United States Congress demanding public ownership of the mines.

"The people of whom he speaks as Greenwich Village reds are the same people who are doing and have done so much for the striking miners throughout our jurisdiction and the most progressive friends the United Mine Workers have.

"It is my opinion by the next convention the United Mine Workers will have smoked out all of the weaklings who have been voting year after year for the idea of nationalization and have no intention of carrying it out to its logical conclusion.

"There is no doubt in my mind that Mr. Searles will get the unanimous applause of the coal operators of the United States and the coal operators should feel proud that they have a champion at the head of the *United Mine Workers' Journal*."

Mr. Golden's letter to Mr. Lewis says that he was glad to receive his appointment to the Nationalization Research Committee "because your instructions, as I understood them, were entirely in accord with my views as to what this committee ought to do."

After quoting from Mr. Lewis' letter dated Oct. 7, 1921, that "the duties of your committee will be to carry out the instructions of the International convention with reference to this subject matter and to familiarize yourself with the various phases of the problem as they may be encountered, with a view of formulating a detailed practical policy to bring about the nationalization of the coal mines and to aid in the dissemination of information among *our members* and the *public* and the crystallization of sentiment for the attainment of such end," Mr. Golden continues:

Actions Based on Instructions, Says Golden

"Since the receipt of your letter in October, 1921, I have, in co-operation with the other members of the committee, proceeded, upon the basis of these instructions, to carry out the instructions on the subject matter and familiarize myself with various phases of the problem as they may be encountered, with a view to formulating a detailed practical policy to bring about nationalization of the coal mines and to aid in the dissemination of information among our members and the public and the crystallization of sentiment for the attainment of such end.

"Consequently I was very much surprised when, during a recent conference between the International officers and the Nationalization Research Committee, you informed us that in your opinion it was not within the duties of the Nationalization Research Committee to give publicity to the findings of that committee, either within or without the organization, until such findings had been presented to the International convention, even denying the use of the *United Mine Workers' Journal* that we might at least keep the rank and file of our organization in touch with the work of committee.

"I regret very much that this interpretation of your instructions to the committee should come so late—after the committee off and on for the past fifteen months of research work had given the widest publicity upon the understanding stated. Had I understood your letter to mean that membership on the Nationalization Research Committee precluded all discussion or public statements concerning the subject of its research until such time as it could report to a convention, I could not possibly have accepted your appointment. My interest in the subject of nationalization of the coal mines is so keen, my feeling in the matter so deep that

I want every member of the organization to think about it and I want to keep it constantly in the public mind.

"Not only would it be impossible for me to serve in this limited capacity but I find it undesirable to go on under these hamstrung and censored conditions until the convening of the International convention in January, 1924. The only course open to me, therefore, is to tender my resignation from membership upon the Nationalization Research Committee, effective immediately. I am very sorry that this difference of opinion has compelled me to take such action and trust that conduct of the work of the committee to date in no way embarrassed the organization."

Heber Blankenhorn, of the Bureau of Industrial Research, defended the part taken by that organization in the work of the committee by saying that the members of the Bureau of Industrial Research, when requested, were quite willing to furnish to the Nationalization Research Committee of the United Mine Workers such data and analyses as were necessary for any scientific approach to the problems of a nationalization policy. The committee availed itself of data from other research organizations and from government officials and altogether went at their task in a manner which any open-minded man should applaud.

The committee's requests were informal, Mr. Blankenhorn said, and the data were given, of course, without payment. Likewise informal, he said, were the requests made by officials of the Mine Workers to members of the Bureau last summer asking that they help raise relief for needy strikers. Members of the Bureau, who believed the workers in the old non-union fields were justified in striking, co-operated, as requested, with friends and acquaintances in raising $55,000 in cash donations or loans sent to officials of the United Mine Workers for the strikers in Somerset.

Brookhart Bill Provides for Government Operation of Mines in Emergency

A bill providing for government operation of coal mines during any period of emergency has been introduced in the Senate by Senator Brookhart, of Iowa. The bill authorizes the President to declare when an emergency exists and "to take over the possession, use, control and operation of any mine for such emergency period." The bill goes into some detail as to how "just compensation" is to be awarded the owner and provides penalties for any operator who obstructs inspection of the property or the record or mishandles funds during the period of federal control. Opinion at the Capitol is that the measure will not be taken up for serious consideration and that it has no chance of passage.

The measure provides "that whenever the President finds that an emergency exists because the supply of coal available for national needs is so inadequate as to obstruct or threaten to obstruct the operation of the Government of the United States and of its several departments, the transportation of the mails, the operation and efficiency of the army and navy, the operation of carriers engaged in commerce among the several states and with foreign countries and the orderly flow of such commerce, he is authorized . . . to take over the possession, use, control and operation of any mine for such emergency period or part thereof as he deems advisable.

"Any operator whose mine is under federal control shall be paid from time to time a just compensation for the possession, use, control, and operation of such mine during the period such mine is under federal control, but such just compensation shall not exceed the amount of the net earnings for such period. The President shall fix or cause the commission to fix the amount of such just compensation. . . .

"The President is authorized to carry out agreements entered into prior to federal control between operators and third persons for the purchase or delivery of coal, in so far as such agreements do not unreasonably interfere with the purposes of federal control.

"In order effectually to administer the provisions of this Act, the President may (a) exercise any of the functions vested in him by this Act through such agencies as he may determine, (b) prescribe regulations and issue orders, (c) provide for the maintenance, repair, and alteration of all mines under federal control, (d) employ and fix the compensation of officers and employees necessary to operate any mine under federal control, and (e) authorize such expenditures as he deems necessary properly to exercise all such functions vested in him by this Act.

"Upon recommendation by the President, the Interstate Commerce Commission is authorized to issue such orders for embargoes and priorities in car service, and to take such other suitable measures as will facilitate the transportation and the equitable distribution of coal, and as will best meet the emergency. . . ."

Indianapolis Case Still Lies Under Dust

"There is nothing I can say in regard to the case," L. Ert Slack, Indianapolis, assistant to the Attorney General, said recently with reference to the indictments pending in the federal court against bituminous-coal operators and miners charged with conspiracy to violate the Sherman anti-trust law. Mr. Slack, who has charge of the prosecution of the case under the direction of Attorney General Harry M. Daugherty, was asked about the disposition of the cases, in view of reports from New York that operators in conference with miners have indicated that the Indiana conspiracy case stands in the way of a wage agreement affecting the Central Competitive Field. The indictments were returned by the federal grand jury in March, 1921. The case was vigorously pressed before the grand jury and later before courts in other states where removal proceedings were instituted. About a year ago when final arguments were to be made by Mr. Slack in one or two removal proceedings, he received instructions from the Attorney General to cease activity pending further directions.

Evidence collected by the government largely was in documentary form taken from proceedings of joint conferences and union conventions. At a hearing before Judge A. B. Anderson of the district court, involving the manner in which Attorney General A. Mitchell Palmer had directed the prosecution of the case, evidence was introduced to show that he had sought to delay the trial. This attitude of the Attorney General was responsible for the resignation of Dan W. Simms, of Lafayette, as an assistant district attorney having a part in the prosecution of the cases. Meanwhile the records in the case have accumulated dust in Mr. Slack's office at the Federal Building. Those who were instrumental in developing the evidence say that weeks now would be required to become acquainted again with the evidence so that it could be presented properly at a trial.

Borah Wants Judge Alschuler to Qualify

Elimination from the bill to amend the act creating the United States Coal Commission of a provision designed to permit Judge Samuel Alschuler to qualify as a member of that body is not satisfactory to Senator Borah, chairman of the Senate Committee on Education and Labor, which is handling this legislation in the upper branch of Congress.

When his attention was called to the fact that the House Committee on Interstate and Foreign Commerce had reported the bill with this provision stricken out, Senator Borah declared that he would use his "full influence" with the members of the Senate committee to have it restored.

"All the information I have received indicates that Judge Alschuler is one of the most valuable members of the commission," Senator Borah said. "He has had several months' experience with the commission's work, and to force him to retire at this stage of the proceedings would be wasteful indeed. I do not agree with the expressed views of some members of the House committee that a federal judge should not be a member of this commission."

The bill is on the unanimous consent calender of the House and probably will be reached in its order by Feb. 14. Chairman Winslow, of the House Interstate Commerce Committee, stated that if indications are that the measure cannot be reached by that date he will ask for a special rule for consideration out of order.

Joint Conference Letter to President Reaffirms Wage-Scale Contracts

Following the joint conference between operators from Illinois, Indiana and eastern Ohio and the United Mine Workers in New York, Jan. 18-23, 1923, the following letter, dated New York, Jan. 24, was sent to the U. S. Coal Commission at Washington:

"Acting upon the urge of the United States Coal Commission advanced in the interest of the common welfare as set forth in a message dated Jan. 4, 1923, and addressed by the commission 'to the Operators and Miners Committee on Reorganization,' then meeting in Chicago, Ill. . . . This Joint Conference of miners and operators of Illinois, Indiana and Ohio, as now constituted, hereby reaffirms the wage-scale contracts now existing between the United Mine Workers of America and the coal operators whose interests are represented in this conference, and hereby extends the same for a period of one year from April 1, 1923, in all of their terms, provisions and conditions, and directs the chairman of this joint conference to mail a copy of this resolution to the President of the United States, to the Attorney General and to the United States Coal Commission, that these public authorities may be duly apprised of this action.

For the Operators:	For the Miners:
Rice Miller,	Lee Hall,
N. C. Perry,	G. W. Savage,
P. H. Penna,	John Hessler,
M. Gould,	Wm. Mitch,
S. H. Robbins,	Frank Farrington,
W. H. Haskins.	Harry Fishwick.

Officers of the Joint Conference:	International Officers of the United Mine Workers of America:
Michael Gallagher, Chairman;	John L. Lewis, President;
Wm. Green, Secretary;	Philip Murray, Vice-President
W. L. Robinson, Ass't Sec'y.	Wm. Green, Sec'y-Treas.

Alex is in Again!

It has always been bone dry in Kansas. That makes it more difficult to understand Alex Howat. Kansan though he has been for years, he's a natural-born tender of bars. He's behind 'em again! Conductor Finnegan who made that pithy and classic report to railroad headquarters has nothing on Howat. Alex, in his experiences with the prison bars of Kansas has been "Off-agin-on-agin" so many times it must be going to his head at last, case-hardened bar hound though he is.

His first case was with John L. Lewis, who kicked him out of the miners' union for calling an outlaw strike. His second case was with the Industrial Court of Kansas, which kicked him into jail for the same deed—kicked him into two jails, in fact, one after another. Last spring he walked out of the first one—Cherokee County Jail—on an appeal. He walked as far as the outer jail office, to be exact—when, whuff! Crawford County snatched him across the line into its own jail for violation of an injunction against that strike he had called. He stayed there for 266 days of his 365-day term. Then came 1923, bringing Governor Davis into the Kansas Capitol. A Davis judge released Howat on parole Jan. 20.

"In some ways I'm sorry to leave jail," Howat remarked as he walked out. He got clear outdoors this time. Cherokee County, with 56 days' imprisonment awaiting him, couldn't stand the thought of Alex being out in the cold that way. So it "retch out and fotch him in," as they say. On Jan. 26 a judge of the Cherokee County District Court issued a bench warrant ordering Alex into that county's jail Jan. 30 to finish his first term. So there he is.

But that isn't all. Alex still has 99 days coming to him back there in the Crawford County jail, whence he exuded on parole Jan. 20. The trouble is, the Kansas Attorney General declares the parole is not valid. Even though Governor Davis thinks the Industrial Court, which Howat offended, is nothing but a bag of gas and the law creating that court is unconstitutional, and even though the Davis-appointed judge freed Alex, the Attorney General says Alex must go back for those 99 days plus. The "plus" indicates still another term in the Crawford County jail over and above the 99 days. In the sentence which sent him to Crawford County it was provided that if Alex wasn't willing to testify before the Kansas Industrial Court when his year in jail for contempt was ended, then Alex should stay right in jail until he was willing.

And so it's "out-agin-in-agin" but not "gone agin" for Alex, the deposed president of Kansas union miners. If he goes back to Crawford County to 'tend bars there until he is willing to tell the Kansas Industrial Court about that strike—now almost forgotten—he may 'tend bars the rest of his natural life. Alex is no Barkis.

Bituminous-Coal Mines Shut Down Between Aug. 7 and Oct. 21, 1922

The extent to which bituminous-coal mines that report weekly to the Geological Survey were shut down during the last three weeks of the coal strike of 1922, and in the weeks immediately following is shown in the appended table, compiled by the U. S. Bureau of Labor Statistics from Survey records. Only commercial mines of some size are included, which in normal times represent from 55 to 60 per cent of the total mine capacity. Although the plants reporting are not completely identical each week, the figures probably present a fairly accurate picture of the trend of operating time.

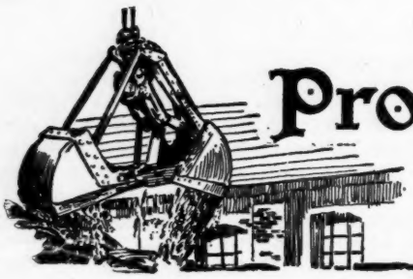
WEEKLY OPERATING TIME AT CERTAIN BITUMINOUS COAL MINES, AUG. 7 TO OCT. 21, 1922.*

Week Ended	Total Number Reporting	Mines Shut Down: Entire week	5 days and less than 6	4 days and less than 5	3 days and less than 4	2 days and less than 3	1 day and less than 2	Less than 1 day	Mines Operated Full Time
		Number							
Aug. 12	1,203	231	60	236	228	132	99	61	156
Aug. 19	1,166	260	52	169	162	143	98	90	192
Aug. 26	1,603	184	81	310	306	229	181	107	205
Sept. 2	1,864	150	109	318	297	322	239	180	249
Sept. 9	2,029	138	121	469	438	278	216	227	89
Sept. 16	1,982	109	157	418	441	278	208	149	222
Sept. 23	2,154	99	213	551	461	293	223	148	166
Sept. 30	2,199	82	221	628	480	317	180	141	150
Oct. 7	2,216	96	233	691	458	317	171	122	128
Oct. 14	2,143	66	198	640	574	265	159	107	134
Oct. 21	2,249	97	200	722	526	275	158	136	135
		Per Cent							
Aug. 12	100.0	19.2	5.0	19.6	18.9	11.0	8.2	5.1	13.0
Aug. 19	100.0	22.3	4.4	14.5	13.9	12.3	8.4	7.7	16.5
Aug. 26	100.0	11.5	5.0	19.3	19.1	14.3	11.3	6.7	12.8
Sept. 2	100.0	8.0	5.8	17.1	15.9	12.3	12.8	9.7	13.4
Sept. 9	100.0	6.8	8.6	23.1	21.6	13.7	10.6	11.2	4.4
Sept. 16	100.0	5.5	7.9	21.1	22.3	14.0	10.5	7.5	11.2
Sept. 23	100.0	4.6	9.9	25.6	21.4	13.6	10.3	6.9	7.7
Sept. 30	100.0	3.7	10.1	28.6	21.8	14.4	8.2	6.4	6.8
Oct. 7	100.0	4.3	10.5	31.2	20.7	14.3	7.7	5.5	5.8
Oct. 14	100.0	3.1	9.2	29.9	26.8	12.4	7.4	5.0	6.2
Oct. 21	100.0	4.3	8.9	32.1	23.4	12.2	7.0	6.1	6.0

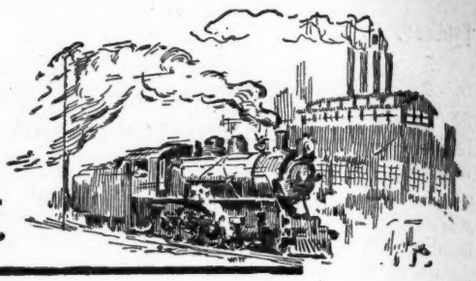
*Prepared by U. S. Bureau of Labor Statistics from records of U. S. Geological Survey.

Coal Companies Oppose Control of Indian Creek & Northern by B. & O.

The Lambert Run Coal Co., the Delmar Coal Co., the Hughes Coal Co., the New Superior Coal Co. and Clarence D. Robinson have filed a petition of intervention in the matter of the application of the Baltimore & Ohio Railroad Co. for authority to acquire control of the Indian Creek & Northern Railway Co. These coal producers contend that the Baltimore & Ohio for the past several months has furnished less than 30 per cent of the total cars required by the petitioners' mines. It is pointed out that these are local mines served only by the Baltimore & Ohio R.R. If that company were allowed to acquire the Indian Creek road, on which line are mines with a potential capacity of 200 carloads of coal per day, the Baltimore & Ohio would be in a worse position to meet the requirements of the mines on its line.



Production and the Market



Weekly Review

Uneasiness prevails throughout the soft-coal trade. Production holds close around 11,000,000 tons per week while prices continue the downward movement. *Coal Age* Index of spot prices at the mine dropped 16 points to 342 as of Jan. 29. This corresponds to an average price of $4.14 per net ton, as compared with $4.33 a week ago.

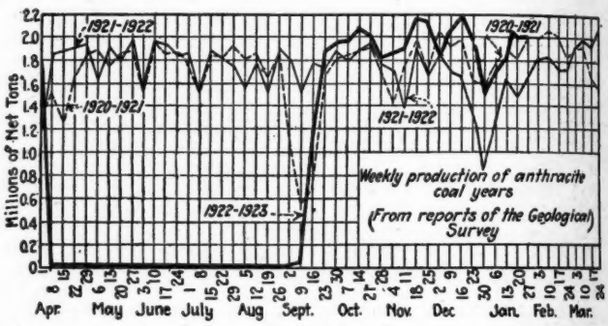
Announcement the middle of last week that operators and the union had signed a contract to continue present wages for one year from April 1, next, had no pronounced effect on the market. This outcome of the wage negotiation had been discounted following the telegram from the Coal Commission to the convention of miners and operators in Chicago on Jan. 4. Coal buyers, particularly those for industrials, had been negotiating for several weeks for storage coal in the event that it developed that there was to be a strike next spring. These orders either have not been placed or have been cancelled in the last few days.

Soft Coal Reserves Not Unusual

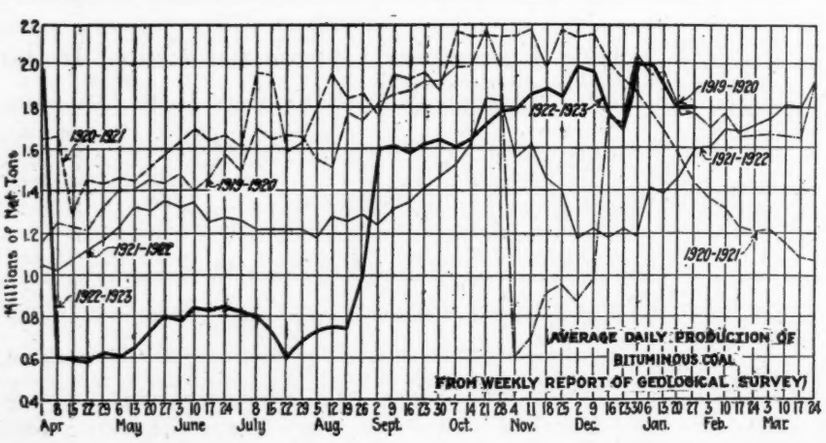
Speculation on what the stock report of the government which it is expected will be released around Feb. 4 will show with respect to reserves as of Jan. 1, centers around a figure of 40,000,000 tons as the minimum. Reserves of this size are not unusual for this time of year, and any figure in excess of 40,000,000 tons will serve to explain the actual indifference of the market. Weather and irregular and fluctuating car supply are the controlling factors at this time. Locally, poor car supply on the leading roads in Pennsylvania in both the high- and low-volatile districts serve on the one hand to uphold quotations, while on the other, embargoes such as that on the New Haven against shipments for industrial use and against B. & M. and B. & A. destinations and the B. R. & P. embargo against New York Central points have knocked down the prices of central Pennsylvania grades. Congestion at Toledo and embargoes on movement into Michigan through that gateway have tended to break the market locally and south to Columbus.

Railroad buying East and West has for the past three months been on a level with consumption. Big-lot buying is slackening off by the railroads, public utilities and the large industrials. The most active buyer continues to be the retailer, who is still taking on substitutes for anthracite in the East and meeting current requirements in the West. The outlook for February is for continued production east of the Mississippi of all the coal the railroads can carry at slowly but steadily declining prices.

One sure indication of slackening of the spot market is the effort now being made by many of the producing



interests to make contracts for the next year. Some shippers are offering twelve-months contracts beginning Feb. 1 and others are contracting from April 1. Highest-grade Pennsylvania coal is being offered for delivery through the year at $4.25 per net ton at the mines. Offerings as high as this are accompanied by guaranteed price clauses which operate to give the buyer any decrease throughout the year on the same coal under similar delivery conditions. On the New York market, buyers have offered tentatively to contract at $3.50.



Estimates of Production

(Net Tons)

	1922	1923
BITUMINOUS		
Jan. 6	7,476,000	10,993,000
Jan. 13 (*b*)	8,302,000	11,217,000
Jan. 20 (*a*)	8,782,000	10,868,000
Daily average	1,464,000	1,811,000
Calendar year	24,560,000	33,033,000
Daily av. cal. yr.	1,228,000	1,651,000
ANTHRACITE		
Jan. 6	1,242,000	1,725,000
Jan. 13 (*b*)	1,643,000	2,113,000
Jan. 20 (*a*)	1,443,000	2,010,000
Calendar year	4,328,000	5,848,000
COKE		
Jan. 13 (*b*)	119,000	323,000
Jan. 20 (*a*)	115,000	328,000
Calendar year	343,000	960,000

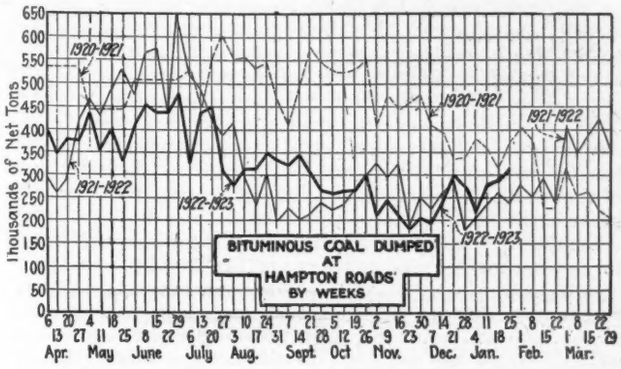
(*a*) Subject to revision. (*b*) Revised from last report

One shipper has sold his output for next year at $3.60, guaranteeing both delivery and price against wage increase. Philadelphia reports contract offerings for the next year at $3.80@$4 on the best steam coal.

Production of anthracite holds up around 2,000,000 net tons per week. Household consumers continue to insist on anthracite and this fact is making retailers generally careful in buying substitutes for fear of being caught with unsalable stock when winter breaks. The Massachusetts congressional delegation continues to urge upon Congress the policy of cutting off our Canadian neighbors from any anthracite. Canada has barely got her quota of this household fuel, but Representative Rogers and Senator Walsh appear to believe that they should not have even that. The demand for anthracite will continue strong to the end of winter.

Prices on Connellsville coke are unchanged, lack of demand on the part of the furnaces being offset by the domestic fuel demand. Buying in small lots of from one to five carloads for Canada, northern New York and Michigan has replaced the wholesale purchases of Eastern buyers that characterized December.

"For the third week in succession the production of soft coal remained stationary at about 11,000,000 tons," says the Geological Survey. "Revised estimates for the week of Jan. 20 place the total at 10,868,000 net tons.



"Preliminary reports for the present week (Jan. 22-27) indicate that loadings on Monday were less than on Monday of the week before. The rate of decline from day to day, however, was less than in that week and total

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

	Market Quoted	Jan. 30 1922	Jan. 15 1923	Jan. 22 1923	Jan. 29 1923†
Low-Volatile, Eastern					
Smokeless lump	Columbus	$3.30	$7.25	$7.25	$6.75@ $7.75
Smkeless mine run	Columbus	2.15	6.60	6.60	**6.50@ 6.85**
Smokeless screenings	Columbus	1.55	5.85	6.00	*5.50@ 6.25*
Smokeless lump	Chicago	2.85	7.75	7.75	7.50@ 8.00
Smokeless mine run	Chicago	2.15	6.35	6.35	*6.00@ 6.25*
Smokeless lump	Cincinnati	3.15	7.75	7.50	*7.00@ 7.50*
Smokeless mine run	Cincinnati	2.05	6.35	6.00	6.00
Smokeless screenings	Cincinnati	1.40	6.10	6.00	6.00
*Smokeless mine run	Boston	4.70	8.75	8.75	*8.00@ 8.25*
Clearfield mine run	Boston	1.95	4.85	4.75	*4.00@ 4.75*
Cambria mine run	Boston	2.45	5.50	5.25	*4.50@ 5.25*
Somerset mine run	Boston	1.90	5.10	5.00	*4.25@ 4.85*
Pool 1 (Navy Standard)	New York	2.85	5.75	5.75	*5.25@ 5.75*
Pool 1 (Navy Standard)	Philadelphia	3.00	.....	5.75	*5.25@ 5.70*
Pool 1 (Navy Standard)	Baltimore	2.70	6.10	5.50	*5.00@ 5.25*
Pool 9 (Super. Low Vol.)	New York	2.20	5.25	5.25	*4.75@ 5.25*
Pool 9 (Super. Low Vol.)	Philadelphia	2.40	5.75	5.55	*4.60@ 5.00*
Pool 9 (Super. Low Vol.)	Baltimore	2.45	5.75	5.10	*4.75@ 5.00*
Pool 10 (H.Gr.Low Vol.)	New York	2.05	4.75	4.50	*4.00@ 4.50*
Pool 10 (H Gr.Low Vol.)	Philadelphia	2.00	5.25	5.20	*4.15@ 4.50*
Pool 10 (H.Gr.Low Vol.)	Baltimore	2.05	5.20	4.35	*4.00@ 4.25*
Pool 11 (Low Vol.)	New York	1.65	4.25	3.35	*3.25@ 3.75*
Pool 11 (Low Vol.)	Philadelphia	1.70	4.35	4.20	*3.15@ 3.35*
Pool 11 (Low Vol.)	Baltimore	1.95	4.20	3.75	*3.25@ 3.50*
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.40	3.60	3.35	*3.00@ 3.25*
Pool 54-64 (Gas and St.)	Philadelphia	1.50	4.15	3.65	*3.10@ 3.40*
Pool 54-64 (Gas and St.)	Baltimore	1.65	3.85	3.25	*3.00@ 3.25*
Pittsburgh sc'd gas	Pittsburgh	2.65	5.25	5.35	*4.75@ 5.00*
Pittsburgh mine run (St.)	Pittsburgh	2.15	3.35	3.50	*3.25@ 3.50*
Pittsburgh slack (Gas)	Pittsburgh	1.75	3.20	3.40	*3.25@ 3.50*
Kanawha lump	Columbus	2.50	6.25	6.25	*5.00@ 5.50*
Kanawha mine run	Columbus	1.65	3.75	3.35	*3.15@ 3.40*
Kanawha screenings	Columbus	1.15	3.35	3.10	3.00@ 3.25
W. Va. lump	Cincinnati	2.45	6.50	6.00	*6.00@ 6.25*
W. Va. Gas mine run	Cincinnati	1.35	3.75	3.50	**3.25@ 3.65**
W. Va Steam mine run	Cincinnati	.....	3.35	3.05	**3.00@ 3.50**
W Va screenings	Cincinnati	1.05	3.25	3.00	**3.00@ 3.50**
Hocking lump	Columbus	2.50	5.35	5.10	*4.25@ 5.00*
Hocking mine run	Columbus	1.90	3.10	2.85	**2.65@ 3.00**
Hocking screenings	Columbus	1.25	2.75	2.60	2.50@ 2.75
Pitts. No. 8 lump	Cleveland	3.05	5.00	5.10	*3.25@ 5.50*
Pitts. No. 8 mine run	Cleveland	$2.00	$3.40	$3.60	*$3.35@ $3.50*
Pitts. No. 8 screenings	Cleveland	1.55	3.15	3.25	3.15@ 3.35
Midwest					
Franklin, Ill. lump	Chicago	3.65	5.35	5.35	5.25@ 5.50
Franklin, Ill. mine run	Chicago	2.35	3.85	3.85	3.75@ 4.00
Franklin, Ill. screenings	Chicago	1.90	2.70	2.65	2.50@ 2.85
Central, Ill. lump	Chicago	3.00	4.35	4.10	*3.75@ 4.00*
Central Ill mine run	Chicago	2.35	3.50	2.85	2.75@ 3.00
Central, Ill. screenings	Chicago	1.50	2.10	1.70	*1.50@ 1.75*
Ind 4th Vein lump	Chicago	3.25	5.10	4.85	4.75@ 5.00
Ind 4th Vein mine run	Chicago	2.40	3.60	3.60	3.50@ 3.75
Ind 4th Vein screenings	Chicago	1.60	2.50	2.30	2.25@ 2.40
Ind 5th Vein lump	Chicago	2.95	4.10	4.10	4.00@ 4.25
Ind 5th Vein mine run	Chicago	2.20	3.10	3.10	3.00@ 3.25
Ind 5th Vein screenings	Chicago	1.45	2.25	1.80	1.75@ 1.85
Standard lump	St. Louis	2.90	4.10	4.10	*3.50@ 3.75*
Standard mine run	St. Louis	2.00	2.60	2.60	*2.25@ 2.75*
Standard screenings	St. Louis	1.00	1.85	1.85	*1.50@ 1.75*
West Ky. lump	Louisville	2.60	4.35	4.10	*3.75@ 4.25*
West Ky. mine run	Louisville	1.90	2.55	2.60	*2.25@ 2.75*
West Ky. screenings	Louisville	.95	2.30	2.30	*1.80@ 2.25*
West Ky. lump	Chicago	.....	4.25	4.25	4.00@ 4.50
West Ky. mine run	Chicago	.....	2.60	1.85	**2.25@ 2.50**
South and Southwest					
Big Seam lump	Birmingham	2.90	3.95	3.95	3.45@ 4.45
Big Seam mine run	Birmingham	1.85	2.35	2.35	2.25@ 2.50
Big Seam (washed)	Birmingham	2.10	2.60	2.60	2.50@ 2.75
S. E. Ky. lump	Chicago	.....	6.25	6.25	*5.75@ 6.25*
S. E. Ky. mine run	Chicago	.....	3.85	3.25	3.00@ 3.50
S. E. Ky. lump	Louisville	2.75	6.50	6.50	6.00@ 7.00
S. E. Ky. mine run	Louisville	1.55	3.50	3.10	3.00@ 3.25
S. E. Ky. screenings	Louisville	1.10	3.25	3.25	2.75@ 3.25
S. E. Ky. lump	Cincinnati	2.75	6.50	5.60	5.25@ 6.00
S. E. Ky mine run	Cincinnati	1.45	3.60	3.35	*2.85@ 3.50*
S. E. Ky. screenings	Cincinnati	.95	3.10	3.00	*2.75@ 3.00*
Kansas lump	Kansas City	5.00	5.50	5.50	5.50
Kansas mine run	Kansas City	4.00	3.75	3.60	3.50@ 3.75
Kansas screenings	Kansas City	2.50	2.50	2.50	2.50

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**, declines in *italics*.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

	Market Quoted	Freight Rates	Latest Independent	Pre-Strike Company	Jan. 22, 1923 Independent	Jan. 22, 1923 Company	Jan. 29, 1923† Independent	Jan. 29, 1923† Company
Broken	New York	$2.34	.....	$7.60@ $7.75	$9.00	$7.75@ $8.25	$9.00	$7.75@ $8.25
Broken	Philadelphia	2.39	$7.00@ $7.50	7.75@ 7.85	.....	7.90@ 8.10	.....	7.90@ 8.10
Egg	New York	2.34	7.60@ 7.75	7.60@ 7.85	9.25@ 12.00	8.00@ 8.35	9.25@ 12.00	8.00@ 8.35
Egg	Philadelphia	2.39	7.25@ 7.75	7.75	9.25@ 11.00	8.10@ 8 35	9.25@ 11.00	8.10@ 8.35
Egg	Chicago*	5.09	7.50	8.25	12.00@ 12.50	7.20@ 8.25	12.00@ 12.50	7.20@ 8.25
Stove	New York	2.34	7.90@ 8.20	7.90@ 8.10	9.25@ 12.00	8.00@ 8.35	9.25@ 12.00	8.00@ 8.35
Stove	Philadelphia	2.39	7.85@ 8.10	8.05@ 8.25	9.25@ 11.00	8.15@ 8.35	9.25@ 11.00	8.15@ 8.35
Stove	Chicago*	5.09	7.75	8.25	12.00@ 12.50	7.35@ 8.25	12.00@ 12.50	7.35@ 8.25
Chestnut	New York	2.34	7.90@ 8.20	7.90@ 8.10	9.25@ 12.00	8.00@ 8.35	9.25@ 12.00	8.00@ 8.35
Chestnut	Philadelphia	2.39	7.85@ 8.10	8.05@ 8.25	9.25@ 11.00	8.15@ 8.35	9.25@ 11.00	8.15@ 8.35
Chestnut	Chicago*	5.09	7.75	8.25	12.00@ 12.50	7.35@ 8.35	12.00@ 12.50	7.35@ 8.35
Range	New York	2.34	.....	.....	.....	8.25	.....	8.25
Pea	New York	2.22	5.00@ 5.75	5.75@ 6.45	7.50@ 11.00	6.15@ 6.30	7.50@ 11.00	6.15@ 6.30
Pea	Philadelphia	2.14	5.50@ 6.00	6.10@ 6.25	7.00@ 9.50	6.15@ 6.20	7.00@ 9.50	6.15@ 6.20
Pea	Chicago*	4.79	6.00	6.25	7.00@ 8.00	5.49@ 6.03	7.00@ 8.00	5.49@ 6.03
Buckwheat No. 1	New York	2.22	2.75@ 3.00	3.50	5.25@ 6.00	4.00@ 4.10	5.25@ 6.00	4.00@ 4.10
Buckwheat No. 1	Philadelphia	2.14	2.75@ 3.25	3.50	5.60@ 5.50	4.00	5.00@ 5.50	4.00
Rice	New York	2.22	2 00@ 2.50	2.50	2.40@ 2.75	2.75@ 3.00	*2.25@ 2.75*	2.75@ 3.00
Rice	Philadelphia	2.14	2.00@ 2.50	2.50	2.75@ 3.00	2.75@ 3.00	2.75@ 3.00	2.75@ 3.00
Barley	New York	2.22	1 50@ 1 85	1.50	1.50@ 2.50	1.50@ 2.00	*1.50@ 2.00*	1.50@ 2.00
Barley	Philadelphia	2.14	1 50@ 1.75	1 50	1.50@ 2.00	2.00	1.50@ 2.00	2.00
Birdseye	New York	2.22	.....	2.00@ 2.50	.....	2.10	.....	2.10

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**, declines in *italics*.

loadings for the first four days showed a slight increase. The indications are that the total output will again be in the neighborhood of 11,000,000 tons."

Mid-West Situation

Practically every Midwestern coal market is displaying identical symptoms: The bottom is sinking. A dash of colder weather during the past week with some snow had a trifling effect and weak transportation made a marked impression. Had it not been for them a sure drop in prices even on the best domestic grades would have taken effect not later than February 1. The standard price of $5.50 a ton for southern Illinois lump—the choicest domestic coal of that state—is maintained by the principal operators only because the available supply is low.

Smaller operators have undersold that price considerably to get business. Continued poor car service, due principally to the fact that railroads are not favoring coal any longer now that no emergency seems to exist, is expected to continue at least for a time. Naturally this means less steam coal on the market. Steam buyers have taken no fright at this prospect and stockers are not rushing into the market, but there is a slight firming of the steam trade. It is anticipated that screenings will not drop any lower. They are selling in southern Illinois now for $2.50@$2.75 with a few sales at $3 but in Central Illinois they have sunk to $1.50 which compares with screenings from the Standard field.

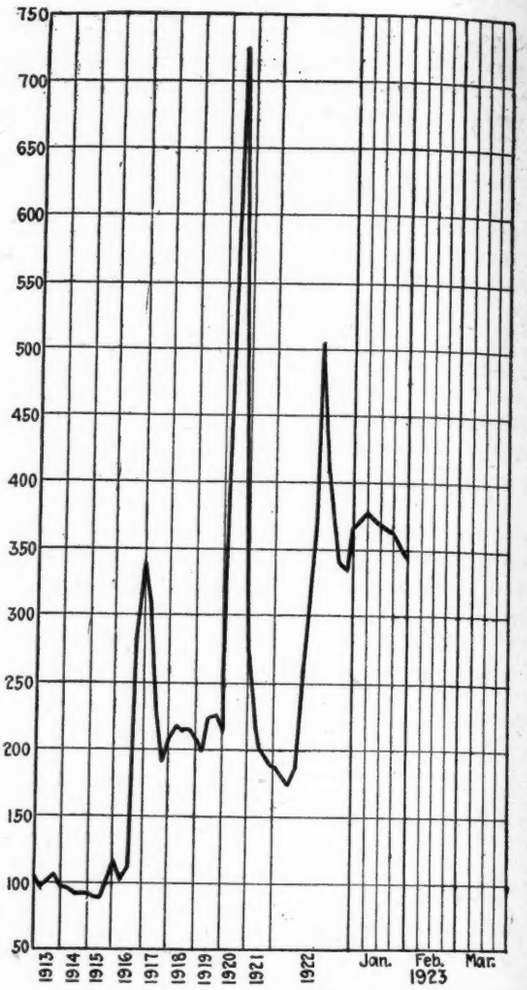
The Chicago market has seen the inflow of a good deal more Eastern coal during the past week. It has moved on the narrowest margins through jobbers' hands and has been placed with such effort that there has been no encouragement to move any larger quantity of it to that dumping ground. Eastern smokeless, whose volume reaching Chicago is still small but increasing slowly, has been selling steadily at $6 with an occasional shading under that during the last few days.

The average of two days a week in running time in the southern Illinois fields and those mining regions clustering east of St. Louis has been enough of an indication to the miners there of what they may expect during the coming three quarters of a year under the old scale of wages. A good deal of dissatisfaction is already apparent among them. Even railroad tonnage in these fields, especially from the Du Quoin and Standard districts, has fallen off thus reducing working time still further.

Standard coal, always lowest in price, has found a fair domestic demand in St. Louis at $3.50@$3.75, but no other coal has been moving easily on that market. Local retail prices in that city on domestic sizes are: Standard, $6.75; Mt. Olive, $7.50; Carterville, $9.50; byproduct coke, $12.50; smithing, $14; all sizes of anthracite, $16.25. Country demand there is weak on all fuels. Dealers are still trying to unload what they have in their yards before a big general drop occurs.

In Kentucky the market generally is softer. There has been some movement of domestic sizes at prices off 25 or 50 cents but all buying is in small lots. Nobody is stocking. Short car supply is having its usual effect in that region too. The Louisville & Nashville has averaged about 20 per cent and the Illinois Central in the neighborhood of 45 per cent in western Kentucky which is low enough to prevent volume from knocking prices flat. However western Kentucky lump has sunk to $3.75@$4.25, mine run to $2.25@$2.75 and screenings to $1.80@$2.25. A good deal of this coal that goes out of the state, moves on consignment hunting a buyer. Jobbers have difficulty in placing shipments until they pass all points of rail congestion. Eastern Kentucky, also with a low car supply is holding up on lump to levels above $6 but there is little call for mine run and screenings have weakened to $2.75@$3.25.

The Northwest is experiencing a noticeable softening in spots. Most of these spots are around the Head-of-the-Lakes where dock men are beginning to worry a little for fear they will not be able to dispose of their 1,750 000-ton bituminous stock by spring. Immediately upon last week's New York settlement with the union for a continuance of the present scale for another year, they started a sales campaign with price concessions of 25 and 50 cents on all



Coal Age Index 342, Week of Jan. 29, 1923. Average spot price for same period, $4.14. This diagram shows the relative, not the actual prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the U. S. weighted in accordance first with respect to the proportions each of slack, prepared tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke, 1913, 1918," published by the Geological Survey and the War Industries Board.

How the Coal Fields Are Working

Percentages of full-time operation of bituminous coal mines, by fields, as reported by the U. S. Geological Survey in Table V of the Weekly Report.

	Jan. 1 to Apr. 1, 1922 Inclusive	Sept. 5 to Dec. 30, 1922 Inclusive	Jan. 1 to Jan. 13, 1923 Inclusive	Week Ended Jan. 13,
U. S. Total	55.7	....	....	....
Alabama	64.6	84.7	94.4	(a)
Somerset County	74.9	36.3	34.7	31.4
Panhandle, W. Va.	51.3	57.3	56.6	52.9
Westmoreland	58.8	65.8	57.4	55.9
Virginia	59.9	55.7	53.7	52.1
Harlan	54.8	22.1	21.6	24.2
Hazard	58.4	16.4	18.1	19.5
Pocahontas	60.0	36.6	33.6	34.0
Tug River	63.7	28.8	36.4	32.4
Logan	61.1	26.2	31.6	31.8
Cumberland-Piedmont	50.6	31.7	44.4	43.2
Winding Gulf	64.3	30.4	34.9	28.8
Kenova-Thacker	54.3	42.4	42.2	40.7
N. E. Kentucky	47.7	28.4	32.6	34.3
New River	37.9	31.6	32.1	32.6
Oklahoma	59.6	59.1	50.2	43.8
Iowa	78.4	75.9	84.2	80.1
Ohio, Eastern	46.6	40.8	36.0	30.4
Missouri	66.8	76.3	89.0	85.2
Illinois	54.5	49.9	60.4	56.8
Kansas	54.9	55.9	62.7	59.7
Indiana	53.8	37.7	56.9	51.3
Pittsburgh†	39.8	41.2	39.9	26.0
Central Pennsylvania	50.2	53.4	46.6	43.0
Fairmont	44.0	35.5	41.5	32.3
Western Kentucky	37.7	32.4	35.1	35.5
Pittsburgh*	31.9	56.1	73.7	67.0
Kanawha	13.0	15.6	18.2	16.9
Ohio, Southern	24.3	38.1	42.7	38.6

* Rail and river mines combined.
† Rail mines.
(a) No report.

soft coals. Dock lump is selling for $9, run of pile $8.25 and screenings as low as $6. Dock operators are frank to say they must cut overhead costs during the coming year and they hope to eliminate the middleman in their effort to meet competition. It is noted in Minneapolis that rail competition is keener than ever right now. Good grade rail coal is laid down in the Twin Cities at $1@$3 less than the cost of competing coal on the docks. The freight rate of dock coal to that market is $1.85. The effect on trade is apparent.

Around the Head-of-the-Lakes it is now admitted there is enough anthracite. The wail for more of it is dying out and docks with hard coal unsold are starting to push it. Prices remain firm however. But in Milwaukee the supply is still a matter of worry. Retail sales are mostly in one-ton lots. A little is coming in by rail but the domestic demand is by no means satisfied and smokeless is not arriving in sufficient volume. Screened Pocahontas sells for $16 and mine run, $12.50. There is a brisk business in coke.

Gloom continues to spread through the coal trade in the Southwest where soft weather, constant oil competition and poor co-operation by railroads conspire to make the coal operator's life unhappy. Few mines have worked more than half time lately. Car shortage has done its bit, however, in holding prices firm. There has been no recession from the standard price of $5.50 for Kansas lump, $3.75 for mine run and $2.50 for screenings while Arkansas semi-anthracite maintains its lump price of $6@$7. Colorado and Utah markets continue weak because of soft weather. In Salt Lake City, Utah lump has dropped from $5.50 to $5.

Ohio Conditions Easier

Settlement of the wage scale controversy and the continued mild weather combined to soften the coal trade in Ohio.

Bituminous coal receipts at Cleveland during week ended January 20th decreased 303 cars under the preceding week, due principally to transportation conditions. Total receipts amounted to 2,587 cars divided 2,021 for industries and 566 to retail yards. Average weekly receipts since January 1st are 2,942 cars as compared with 2,345 cars during the last quarter of 1922.

It had been possible to increase the output of the New River field somewhat during the latter part of January owing to a larger run of cars during the earlier part of each week and on Monday, January 15 the output reached the highest level in several years, 45,000 tons being loaded that day.

Pocahontas production has been slightly increased and yet the output is not much above 225,000 tons a week. Tug River mines are also loading more coal. The output, however, is still a little less than full-time capacity.

More cars are being distributed to the mines in the Kanawha region than was true as to the early part of January and it has been possible for such mines to increase their working time. Increased production however, has been at the expense of higher price levels for with so much more fuel going to market from the Kanawha and other regions prices have been dropping and it has become exceedingly hard to keep pace with them from day to day. Mine run for western delivery now commands approximately $3 a ton, with lump ranging from $5 to $6.

It has become possible to speed up production to some extent in the Logan region where mines are now working about on a half time basis so that the output has reached about 250,000 tons a week. Such an increase has been due to better transportation facilities.

Throughout the greater part of January influenza among the miners and their families in Virginia was making inroads on production to the extent of about 7 per cent. Car shortage losses, however, affected production to the extent of nearly 40 per cent and inability to secure more empties was principally responsible for a slightly lower output. However, a heavy tonnage was being used in the production of coke which is now averaging about 17.000 tons a week in the field. A softer market had the effect of causing a slight price recession, buying being on a lighter scale.

Under the stimulus of a better car supply Northern Panhandle mines were able during the latter part of January to produce more coal and to materially increase shipments inasmuch as haulage to various markets was better. The volume of coal for Eastern markets was especially large.

Dropping prices featured market conditions in northern West Virginia as elsewhere in West Virginia during the week ending January 20 and at the outset of the following week, due to several causes. In the first place with cars more plentiful, a larger tonnage of fuel was flowing to market and in the next place consumers, particularly of steam coal, were not so strongly in the market.

Production has reached large proportions in the Upper Potomac, Georges Creek and surrounding territory, aggregating more than 110,000 tons a week which is the highest figure reached in some time.

North Atlantic Market Quiet

Spot inquiry for bituminous in New England is even less pronounced than a week ago. Buyers are more inclined to wait developments. The wage settlement at New York, and somewhat less favorable prospects for manufactured goods have together caused a marked change in the outlook for February. Port facilities at Boston are again congested, upwards of 80,000 tons having been entered at Mystic wharf alone and waiting discharge. A share of this is British coal for locomotive supply, but most of the accumulation results from increased shipments of Pocahontas and New River. Demurrage has accrued to such an extent that steam users are unwilling to make purchases except at competitive prices f.o.b. cars. On the whole the trade is apprehensive that quotations will be materially less within a reasonably short time.

Spot prices on all the Pennsylvania grades have dropped 50c. or more in consequence, and more than a few shippers are willing to accept orders on this basis for shipment when the embargoes are raised.

At Hampton Roads the available coal on cars is steadily mounting, and this applies both to Navy standard grades and those high volatiles that are shipped in anticipation of demand for railroad supply. Movement to Tidewater has shown a steady increase as compared with deliveries West, and most of the agencies agree that the trade is in for a sluggish market. Spot coal that is being urged on buyers inland from Boston has sold as low as $10 per gross ton on cars Boston, this basis comparing with $11 a fortnight ago. Notwithstanding the embargoes all-rail there has been surprisingly little inquiry for spot coal the past few days.

F.O.B. Norfolk and Newport News Pocahontas and New River have already sold down to $8 per gross ton f.o.b. vessel. Buyers are so scarce that shippers are inclined to listen to any favorable offering and a much lower level is anticipated during the current month. The slow dispatch at the loading piers ten days or so ago has now materially improved and steamship owners are again willing to make charters without guaranteed days for loading.

Anthracite Output Holds Up

"The production of anthracite in the week ended January 20 is estimated at 2,010,000 net tons including mine fuel, local sales, and washery and dredge output," by the Geological Survey. "This estimate is based on reports from the nine principal carriers, showing a total of 38,429 cars loaded. This is a decrease of 5 per cent as compared with the week preceding.

"Preliminary reports for the first half of the present week indicate a slight increase over last week and that the total production for the week will be about 2,100,000 tons."

Car Loadings, Surplusages and Shortages

	Cars Loaded	
	All Cars	Coal Cars
Week ended January 13, 1923	873,251	198,686
Previous week	770,303	187,746
Same date in 1922	714,191	157,964

	Surplus Cars		Car Shortage	
	All Cars	Coal Cars		
January 13, 1923	28,282	6,155	73,342	37,014
January 7, 1923	20,426	5,490	73,285	34,243
Same date in 1922	439,982	.....	.....	.....

Foreign Market And Export News

British Coal Production Registers Big Gain; Export Demand Heavy

Output of British coal during the week ended Jan. 13 was 5,605,000 tons as against 4,385,000 tons the previous week, an increase of 1,220,000 tons, according to a cable received by *Coal Age*.

There is a heavy demand for shipments to the United States and France and the ports of South Wales are crowded with ships. A number of boats are unable to finds berths.

It is estimated that approximately 300,000 tons has been sold to the United States and Canada for shipment early this year, and it is said that many inquiries have been received from the United States for steam and gas coals for shipment over the next 3 or 4 months.

The Swedish State Railways are in the market for tenders for 70,000 tons of the best steam coals for delivery into March.

If France seizes all the Ruhr coal for herself and Italy, Germany must turn to Britain to compensate herself for what she will lose.

There were 8,345,606 tons of British coal exported to Germany in 1922 as against 817,877 tons in 1921 and 13,457 tons in 1920. Last year's export nearly equaled the tonnage exported in 1913 when it was 8,952,328 tons.

French Miners Want Wage Conferences Resumed

The miners of the Nord and Pas-de-Calais have asked that the negotiations for a wage increase be resumed at once. These negotiations which were started several weeks ago were postponed until April next but the miners on account of the continued rise in the cost of living request that the demands be taken up immediately.

There has been a decrease in the demand for domestic coals. Arrears have been partly overtaken and delays of delivery do not exceed more than two or three weeks.

The demand for industrial coals remains excellent. Pithead stocks have dwindled to unimportant figures and stocks of the most merchantable sorts are almost completely wiped off.

The imports during November amounted to 1,964,940 metric tons of coal; 437,078 metric tons of coke and 179,866 metric tons of patent fuel.

The exports during the same period were 295,336 metric tons of coal, 47,442 metric tons of coke and 16,525 metric tons of patent fuel.

Germany supplied to France and Luxemburg in November and December, the following amounts of reparation fuel, in metric tons:

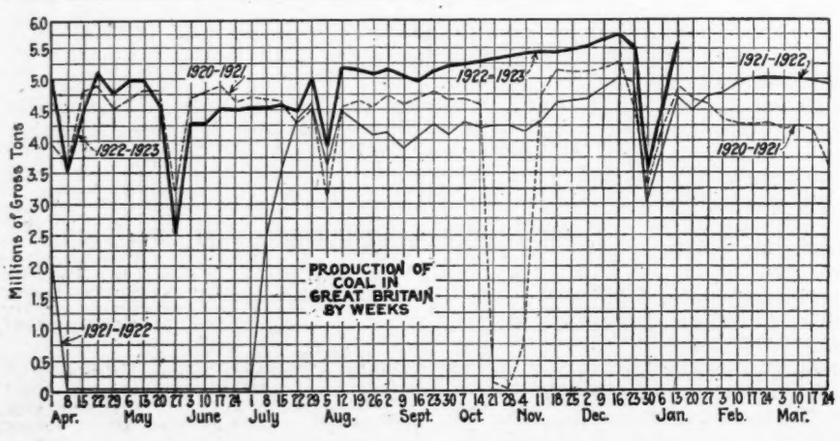
	France		Luxemburg	
	November	December	November	December
Coal	332,901	320,232	3,068	5,617
Coke	387,754	402,080	125,223	122,687
Lignite briquets	52,499	52,134	5,060	5,030
Totals	773,154	774,446	133,351	133,334

The December coal shipments included 33,314 tons of coking slacks.

Hampton Roads Situation Dull

Business at Hampton Roads was comparatively dull, and coastwise movements continued to slow up on account of reported surplus of stocks in the north. Supplies at this port increased to a point greater than at any time in the last three months, but car supply continued at about 35 per cent of normal.

Increase in general shipping has made bunker business fairly active, but no exports, except occasional small cargoes, have been booked. In the domestic trade, a scarcity of prepared soft coal is seen, while anthracite is practically unobtainable. Prices of Pocahontas coal have gone up to $14, and run of mines is $11, the highest figure ever reached here by these grades. The general feeling in the trade was one of optimism, and the general tone of the market was firm.



Ruhr Valley Coal Output Increased

Coal production of the Ruhr Valley amounted to 97,350,000 tons in 1922, as against 94,114,785 in 1921, an increase of 3,235,215 tons. The December output was 7,900,000 tons, a decrease of 696,214 tons from that of the previous month, due to the suppression on Dec. 18 of the extra-shift agreement. While the November production amounted to nearly 8,600,000 tons that of December inclusive of the pits on the left side of the Rhine amounted to 7,900,000 tons, at 23¼ working days.

The following table shows the total production of the last two years and that of the year 1913 in tons:

	1913	1921	1922
January	9,786,005	8,072,912	8,132,763
February	9,194,112	8,174,606	7,737,974
March	9,181,430	7,685,185	9,014,278
April	9,969,560	7,894,985	7,512,646
May	9,261,448	6,954,607	8,081,951
June	9,586,385	7,753,350	7,078,361
July	10,150,347	7,782,676	7,864,200
August	9,795,236	8,068,065	8,336,773
September	9,696,397	7,853,871	8,265,688
October	9,895,090	8,047,353	8,827,126
November	8,932,276	7,772,658	8,596,214
December	9,101,858	8,054,517	7,900,000
Whole year	114,550,153	94,114,785	97,350,000

Export Clearances, Week Ended Jan. 25, 1923

FROM HAMPTON ROADS

	Tons
For Atlantic Islands:	
Nor. SS. Karmoy, for Guayabal	1,819
For Canada:	
Br. Schr. Harry A. MeLennan, for St. John's	1,108
For Canal Zone:	
Amer. SS. Cristobal, for Cristobal	9,440
For Santa Domingo:	
Amer. Schr. Jere G. Shaw, for Santo Domingo	550

Hampton Roads Pier Situation

	Jan. 18	Jan. 25
N. & W. piers, Lamberts Pt.		
Cars on hand	723	953
Tons on hand	49,647	68,515
Tons dumped for week	123,613	106,648
Tonnage waiting	8,400	6,650
Virginian Ry. piers, Sewalls Pt.		
Cars on hand	1,522	1,439
Tons on hand	86,160	87,020
Tons dumped for week	62,154	104,147
Tonnage waiting	15,000	10,000
C. & O. piers, Newport News:		
Cars on hand	1,821	1,850
Tons on hand	100,775	103,290
Tons dumped for week	72,584	80,489
Tonnage waiting	10,280	200

Pier and Bunker Prices, Gross Tons

PIERS

	Jan. 20	Jan. 27†
Pool 9, New York	$7.75@$8.25	$7.75@$8.25
Pool 10, New York	7.25@ 7.50	7.25@ 7.50
Pool 11, New York	6.75@ 7.00	*6.00@ 6.50*
Pool, 9, Philadelphia	8.25@ 8.80	*7.65@ 8.00*
Pool 10, Philadelphia	7.45@ 8.00	*7.10@ 7.35*
Pool 11, Philadelphia	7.20@ 7.50	*6.60@ 6.75*
Pool 1, Hamp. Roads	8.50@ 8.75	*8.25*
Pools 5-6-7 Hamp. Rds.	8.50	*8.00*
Pool 2, Hamp. Rds.	8.50@ 8.75	*8.25*

BUNKERS

Pool 9, New York	$8.10@$8.60	$8.10@$8.60
Pool 10, New York	7.60@ 7.85	7.60@ 7.85
Pool 11, New York	7.10@ 7.35	*6.35@ 6.85*
Pool 9, Philadelphia	8.60@ 9.05	*8.25@ 8.60*
Pool 10, Philadelphia	8.15@ 8.50	*7.40@ 7.60*
Pool 11, Philadelphia	7.70@ 7.85	*6.90@ 7.15*
Pool 1, Hamp. Rds.	8.50@ 8.75	*8.25*
Pool 2, Hamp. Rds.	8.50@ 8.75	*8.00*

Current Quotations British Coal f.o.b. Port, Gross Tons

Foreign Quotations, by Cable to Coal Age

	Jan. 20	Jan. 27†
Admiralty, large	28s.6d.@ 29s.	**29s.@ 30s.**
Steam, smalls	18s.@ 18s.6d.	**20s.@ 20s.6d.**
Newcastle:		
Best steams	26s.	**26s.6d.@ 27s.6d.**
Best gas	24s.6d.@ 25s.	**25s.@ 26s.**
Best bunkers	22s.6d.@ 23s.6d.	**25s.**

† Advances over previous week shown in *heavy* type; declines in *italics*.

News Items From Field and Trade

ALABAMA

The Empire By-Products Corporation, chartered under the laws of Delaware, with a capital stock of $2,000,000, will soon commence construction work on a 50-oven byproducts coke plant, near Empire, in Walker County. Approximately $1,500,000 will be spent on the construction of this plant. Mr. Moore, head of the Empire Coal Co., is largely interested in the Empire By-Products Corporation. He owns extensive coal mines and other properties in Walker County.

Alabama coal fields produced 16,630,000 tons of coal in 1922. This is an increase of 3,613,000 tons, or approximately 25 per cent over 1921, according to the Alabama Mining Institute. The largest production for any one month was during August, owing to the coal strike in other fields when consumers turned to Alabama for coal supplies. The following table gives the output in Alabama fields by months in 1921 and 1922, in tons:

	1921	1922
January	1,500,000	985,000
February	1,150,000	1,025,000
March	990,000	1,380,000
April	985,000	1,179,000
May	900,000	1,380,000
June	875,000	1,500,000
July	875,000	1,530,000
August	1,050,000	1,750,000
September	1,075,000	1,450,000
October	1,285,000	1,435,000
November	1,288,000	1,550,000
December	1,047,000	1,475,000
Totals	13,020,000	16,639,000

COLORADO

Clinton L. Oliver, of Kansas City, Mo., has just returned from Paonia, where he has arranged for the mining of coal on an 80-acre tract. Several years ago this land was regarded as valueless by Mr. Oliver's father, and the senior Oliver was seriously thinking of letting it go for taxes. Coal companies in the vicinity steadfastly refused to exploit the land. The nearest railroad was a mile away. But the younger Oliver offered his father $380 an acre for the land, a total of $30,400, which was accepted with haste. Now young Oliver estimates that he will eventually receive $1,400,000 from the investment through coal royalties. The mine will be in operation by March 1 by a syndicate of Western mining men, who, under contract, will mine **daily 200 tons of coal** from veins totaling about 60 ft.

Robert A. Jackson, formerly mining engineer with the Hillman Coal & Coke Co., at Jerome, Pa., is now located at Walsenburg, Colorado, with the Colorado Fuel & Iron Co.

CONNECTICUT

Thomas Russell, State Fuel Administrator, has tendered his resignation and that of Deputy Administrator Charles Jaynes, of West Hartford, to Governor Templeton. Mr. Russell in his letter said that the apparent reluctance of the State Legislature to act in the present emergency coal situation "can be due to only two reasons: (1) a belief that no emergency exists—in which case this administration is not needed by the State—or (2) the fact that the character of this administration is such as to make them timid about giving it legal authority for its action. In order to clarify the situation as regards the latter condition, I feel that it would be helpful to you to give you a free hand in building up a new organization in which the Legislature might have more confidence."

ILLINOIS

A total of 6,444,922 tons of coal was produced by the mines of St. Clair County during 1922. Six men met death during the year in the mines. The annual report shows that 60 shipping mines employed 7,653 men underground and 821 on the surface. Active operating days in the shipping mines totaled 153 in the year. The St. Louis & O'Fallon Coal Co. leads in the output by shipping mines with a total of 653,883 tons in its two Nigger Hollow mines.

Lyman Graham has retired as active head of the **McLean County Coal Co.** after 55 years of service with this company. Ill health has made this step necessary. The directors of the company were unwilling to accept his resignation as president of the company, but allowed him to retire from active service and responsibility with full salary, keeping his position as president of the company, but with another man to take active management of the plant. Mr. Graham is 78 years of age and is one of the "grand old men" of the Illinois coal trade.

James G. Monahan, of Chicago, has been named manager of the Peabody Coal Co. interests in the Springfield district and will also manage the Springfield District Coal Mining Co., as successor to the late Alfred G. Hall, who died Dec. 28, 1922. Mr. Monahan has been associated with the Peabody Coal Co. for the last six years. He was formerly in charge of the Buffalo district, spent several years in the Chicago office and also was on the road for this company for some time as a salesman. He will remove his family to Springfield and make his permanent home there.

Anton Loeffler has been named acting superintendent of the three mines of the Spring Valley Coal Co. to succeed the late William Bevan. His appointment was effective Jan. 1. He has been serving as mine boss at the No. 5 mine.

Howard A. Swallow, attorney, Danville, has been elected president of the **United Electric Coal Co.,** of that city, to succeed F. E. Butcher, resigned. Mr. Swallow has for sixteen months been vice-president. J. B. Melville, treasurer, has been elected vice-president to succeed Mr. Swallow. The complete list of officers and heads of departments of this $1,500,000 coal-producing corporation is as follows: Howard A. Swallow, president; Richard Campbell, vice-president and general counsel; J. B. Melville, vice-president and treasurer; E. H. Jobson, secretary; James Anderson, general superintendent in charge of operations; F. E. Toenniges, chief engineer; L. G. Shorthouse, auditor, and J. C. Lane, M. C. Bateman, Felix Pichon, Alex Anderson and W. B. Reid, mine superintendents.

Large areas of land in Jefferson County, near Mount Vernon, have been sold recently for mining purposes and tests are now being made to ascertain the quality and the quantity of the coal. Two drills are now being used in testing out the field, which is said to adjoin the large acreage already acquired by the Nason interests in Jefferson County. One drill is now at work in Section 16 of Spring Garden township east of the Chicago & Eastern Illinois R.R. Many thousand acres of Jefferson County coal land have been sold in recent years and there are still large areas under option which are subject to sale. The Illinois Coal & Coke Corporation is the largest owner of coal land in Jefferson County, owning a tract of 30,000 acres in the southern part of the county, said to be one of the largest units of coal land owned by one company to be found in the United States. The Inland Steel Co. owns a tract of about 8,000 acres in the southern part of the county. The Southern Gem Coal Co. has extensive coal holdings in the vicinity of Waltonville and Sheller. E. S. Carson, of Waltonville, also owns approximately 1,800 acres of coal land in the vicinity of Waltonville.

The North American Co., E. W. Clark & Co., of Philadelphia, and the St. Louis & Belleville Electric Railway Co. may be **compelled to declare in court who owns the St. Louis & Belleville Electric,** an 18-mile coal road from Belleville, Ill., to East St. Louis, Ill. Suit has been filed by M. W. Borders, a Chicago attorney asking an accounting in connection with the sale of the road to the East St. Louis & Suburban Ry. Borders asserts that E. W. Clark & Co. bought coal land on a 50-50 basis with him, which was to be developed jointly when a railway line had been projected from the St. Louis and Belleville line, and that E. W. Clark & Co. had agreed to buy his share of the land in case they sold their interest in the electric line.

Incorporation papers have been filed at Mt. Vernon for the **Southern Illinois & Kentucky R.R.** to extend from Edgewood in Effingham County, to Metropolis, opposite Paducah, Ky., and a branch from Akin, in Franklin County, southwest to the northern terminus of the proposed Benton Southern Ry. This opens up Jefferson and new parts of Franklin County coal fields. C. H. Markham, president of the Illinois Central R.R., is one of the incorporators.

INDIANA

Miners employed at the **Mt. Pleasant Coal Co.'s** mine south of Terre Haute declare they have been locked out. The mine has been closed and mine workers declare the management has refused to employ union men. The mine was opened only a short time ago and the men who were employed either were former members of the United Mine Workers or were members of other local unions. They applied for a charter and when they were admitted to the mine workers' union, G. R. Wilson, owner of the mine, is said to have discharged them.

Two men were killed recently and another seriously injured following an explosion in the **American Mine No. 1,** near Bicknell, owned by the Knox Consolidated Coal Co. It was reported that little damage was done to the mine property.

The offices of the Southern Indiana Coal Bureau, at Evansville, will be closed temporarily in the absence of H. W. Little, who has gone to Washington as secretary of the National Coal Operators' Association. It is probable the offices will not be reopened until next September.

Francisco mine No. 1, near Princeton, recently **broke its former production record** 1,772 tons of coal being hoisted in eight hours. This mine is becoming one of the largest producers in southern Indiana and is being modernized in every way. Every mine in the county started the new year right by working the first day of 1923.

The Clinton Coal Co.'s Crown Hill mine No. 3, southwest of Clinton, mining fourth-vein coal, **has resumed operations** after having been shut down for several months. Lightning damaged the brick stack at the power plant about six months ago, and until the outlook for selling coal brightened recently the stack was not repaired. Shipping conditions also have improved the business of the company sufficiently to warrant the opening of the mine, officials say.

The Arnold Fuel Co. of Indianapolis, has filed a final certificate of dissolution with the Secretary of State.

KENTUCKY

In view of a lot of talk concerning a business man **for the next governor of Kentucky, James R. Rash,** Madisonville, state senator, director, large stockholder and realty man for the St. Bernard Coal Mining Co. and father of Frank D. Rash, president of the St. Bernard, is planning to announce his candidacy on the Democratic ticket. Mr. Rash is one of the wealthiest and most influential residents of western Kentucky.

The Whitesburg mine of the Last Dollar Coal Co., at Whitesburg, was opened recently. It is on the Eastern Kentucky Division of the L. & N. R.R.

The Winchester Coal Co., of which N. M. White, Jr., of Prestonburg, is president, is planning extensive developments at Emma, on 175 acres of coal land, which will result in a production of eight cars of coal a day. The company is planning to install a steam hoist.

S. M. Reams, B. T. Milam and G. T. Anderson have incorporated the **Clear Fork Coal Co.** at Middleboro, Ky., with a capital of $150,000.

The Green River Coal Co., with post office address at Moorman, has been incorporated to do business at Mogg, with a capital of $20,000. The incorporators are: Carl A. Reis, L. D. Shearer and John R. Barrett.

The Fusonia mine of the McIntire Coal Co., at Fusonia, was opened recently. It is on the L. & N. R.R.

The Letcher-Elkhorn Land Co., capital $50,000, a coal organization, **has been chartered** by Sam Collins, Lexington; D. I. Dat and Lewis E. Harvie, Whitesburg. These men have bought and leased acreage, and are planning some coal development projects. Mr. Collins is state prohibition officer.

Henry LaVoie, special representative of the Ford Motor Co., in Louisville a few days ago, in talking to the Louisville Ford dealers held that the **recent coal land purchases by Ford interests in eastern Kentucky were only a start,** as still further acquisitions are planned.

The Meem-Haskins Coal Corp. has opened the No. 2 mine, at Montago. This mine is on the L. & N. R.R.

The Idamay mine of the Smith-Abston Coal Co., at Idamay, was opened recently. It is on the L. & N. R.R.

MICHIGAN

The Koppers Co., Pittsburgh, Pa., will construct for the **Battle Creek Gas Co.**, Battle Creek, **a coal-gas plant** consisting of 11 byproduct gas ovens of the new Koppers type and a Koppers gas producer equipped with a waste heat boiler. The ovens will be 13½ in. wide and have a capacity of approximately 6¾ tons per charge. Based on coking speed of 12 hours, the plant will have a capacity of 1,500,000 cu. ft. of gas per day when heated with producer gas.

MINNESOTA

The Blue Diamond Coal Sales Co., of Cincinnati, has moved its western office, heertofore at Iowa Falls, to Minneapolis, and has opened quarters in charge of H. J. Stickney. Dock space for 250,000 tons at Duluth and Superior has been obtained and both a dock and all-rail business will be done.

The North Dakota Lignite Coal Operators' Association suggests the possibility of establishing a steel center at the Twin Cities by the use of cheap lignite fuel to work on Minnesota ores and having the large labor market of the Twin Cities to draw upon.

MISSOURI

The Otterville Mining Co., which was organized at Otterville, two months ago to prospect for coal, has sunk a shaft about 30 ft. and encountered tunnels and workings of some old abandoned mine. Three stone hammers or mauls have been found, which are different from any kind now found in this section. The oldest residents have no recollection of any white men working such a mine, and Captain Frank A. Shults, the superintendent, believes the work that of some people who inhabited the country before the coming of the white man.

The Peerless Fuel Co. has been incorporated in St. Louis to acquire by purchase, lease or otherwise, to construct, develop and operate coal mines and properties; manufacture, buy, sell and deal in coke and byproducts of coal and minerals; capital, $40,000. Shareholders: John Henderson, Carl Voigt and E. W. Brandenbruger.

The Turpin coal mine at Brookfield, which was flooded with water a few weeks ago, is being opened by Thomas Grubbs & Co., who expect to be able to deliver coal in the near future. The company has pumped the water out of the mines and has started the fans to going, preparatory to sending men into the shaft.

After he refused to give a satisfactory explanation regarding assets of a bankrupt concern in which he was a principal, **George W. Carter**, head of the Carter-Williams Coal & Grain Co., of St. Joseph, was sentenced to an indefinite term in the Buchanan County jail for contempt of court by Judge Arba S. Van Valkenburgh, of the federal court Dec. 26, 1922.

MONTANA

A bill calling for an **investigation of the cost of producing and selling coal** in this state has had two readings and is expected to pass the Legislature.

Montana market conditions are peculiar. Operators in the Roundup field, on the Chicago, Milwaukee & St. Paul R.R., report that they have been working steadily. The mines on the Great Northern, near Great Falls, have been handicapped only by lack of transportation. The railroad is taking practically all of the small coal. The Red Lodge mines of the Northern Pacific R.R. have been steadily working, but the mines in the Bearcreek field, over the hill, are in a slump. One operation put in only three days during the first two weeks of January.

NEW YORK

Charles F. Hurd, Jr., formerly assistant secretary of the Hillside Coal & Iron Co., has been made assistant to the president and assistant secretary, effective Jan. 1, 1923. Mr. Hurd takes up the duties of T. S. Pendreigh, deceased. His headquarters will be 165 Broadway, New York City.

Henry L. Harnden, formerly with the Garfield & Proctor Coal Co. and later in charge of bituminous coal sales for the Tuttle-Berger Coal Co., and **Kenneth F. Cramer**, formerly Connecticut representative of the Garfield & Proctor Coal Co. and later New England representative of the Tuttle-Berger Coal Co., **have formed the Hornden-Cramer Coal Co.**, with offices at 150 Nassau Street and a branch office in Hartford, Conn. They will transact a wholesale coal business.

O. D. Street, for the past ten years general manager of distribution of the Western Electric Company, has been **elected vice-president of the McGraw-Hill Company**, in executive charge of the **Electric Railway Journal, Bus Transportation, Electrical World, Electrical Merchandising, Journal of Electricity and Western Industry** and **Industrial Engineer**. Mr. Street brings to these publications a broad background of business training and an extensive contact in the electrical industry.

Mr. Street was born in Massachusetts in 1877. He entered the organization of the Western Electric Company in 1901 on his graduation from Williams and has a broad practical training. He was in charge of telephone sales on the Pacific Coast, assistant to the president, Atlanta branch manager, general telephone sales manager and latterly general manager of distribution. During the war he rendered invaluable service in reorganizing the warehousing division of the Quartermaster's Corps and establishing an orderly system of forwarding to Pershing's army where chaos had existed before.

Ernest L. Smith, recently appointed Fuel Administrator for Queens County, has opened an office at 422 Jackson Ave., Long Island City. His chief assistant will be Oscar F. Shaw.

The Westmoreland Coal Co. has declared a stock dividend of 33⅓ per cent, payable Feb. 1 to stockholders of record Jan. 20.

The first step in making a national corporation out of the present Burns Brothers Coal Co. is seen in the preparations which have been made calling for the organization of the National Coal Co. under the laws of the State of New Jersey. Application for a charter is expected to be made soon. The company will have an authorized preferred capital of $10,000,000 and also 500,000 shares of common stock without par value. When the Burns Brothers Coal Co. took over control of the William Farrell Coal Co. some time ago officers of the former organization announced that it was their intention to nationalize the company and extend its operations to the larger cities in other sections of the country. Many rumors have been afloat within the recent past that Burns Brothers was negotiating to take over the Consumers' Company of Chicago, the largest distributors of coal and ice in that city. Reports circulated some time ago also declared that the company intended to take over retail coal distributing organizations in St. Louis, Philadelphia and Boston.

That there are teeth in the New York State Fuel Administrator Law and that those teeth can bite was shown at Syracuse on Jan. 26, when **Fred Kenyon, a coal dealer, arrested as a coal gouger** under the fuel administration, was convicted by a jury in police court and sentenced by Justice Shove to serve three months in the penitentiary and pay a fine of $100. Kenyon was accused of having sold 81½ lb. of coal Jan. 16 when 100 lb. had been asked and paid for by the customer.

Among arrivals from Europe on the Berengaria Jan. 27 were C. M. Barnett, vice president of the Clinchfield Navigation Company, and L. R. Lewis, C. B. E. and H. Merritt, Welsh coal-mine owners.

OHIO

The Monsarrat Mining Co., chartered with a capital of $200,000 to mine coal in the Hocking Valley section, is an incorporation of a going concern which has been conducted under the name of Monsarrat Bros., in Columbus. The company has three large mines with a large acreage on the T. & O. C. side of the Hocking Valley. Incorporators are N. D. Monsarrat, C. R. Monsarrat, F. H. Watson, Aaron DuBois and William H. McCall. N. D. Monsarrat is president and C. R. Monsarrat vice-president. At the same time the **Monsarrat Bros. Coal Co.** was chartered with a capital of $25,000, by the same incorporators to act as selling agent for the mines and to do a general wholesale business. C. R. Monsarrat is president; N. D. Monsarrat is vice-president, and F. H. Watson, secretary and treasurer. F. H. Watson has been acting as sales manager of the concern.

The Board of Purchase of the Columbus municipal government has rejected all bids opened Jan. 17 for approximately 13,000 tons of nut, pea and slack for various city departments and the city council adopted a resolution authorizing the buying of coal on the open market.

Homer C. Gill, a Columbus retailer and president of the Michigan-Ohio-Indiana Coal Association, is recovering from a severe attack of grippe.

Changes brought about by the war have raised the cost of labor in Europe very materially and there is an increasing call there for equipment of the American type. An interesting example of this is the **coal crane supplied to the Coal Trading Association of Rotterdam** by a well-known engineering firm of Cleveland, Ohio, for in spite of the depreciated state of German currency and the lower price of labor in England, Belgium and France, these careful Rotterdam business men purchased this important equipment in America and placed it in the most competitive center of industrial Europe. The machinery is now in operation, being used to transfer ore from tramp steamers to Rhine barges and coal from like barges into ocean-going steamers for shipment abroad.

PENNSYLVANIA

Stockholders of the **Jefferson-Clearfield Coal & Iron Co.** met in Indiana on Jan. 16 and voted an increase in the present capital stock from $3,000,000, consisting of $1,500,000 preferred and $1,500,000 common stock to $7,500,000 by the issuance of $100 par value of additional common stock. The directors previously had declared, subject to the approval of the stockholders of the increase in stock, a dividend of 150 per cent payable in common stock on Jan. 18 to preferred and common stock of record at the close of business Dec. 30, 1922.

Fifteen hundred mine workers who for five days had tied up the production of anthracite coal at the Woodward colliery of the **Glen Alden Coal Co.** Edwardsville, with a petty grievance strike, voted Jan. 10 to return to work, following talks by District President William J. Brennan, Board Member John Boylan and several other officials of District No. 1, all of whom urged the men to call off the strike. **The men went back to work Jan. 11.** The grievance, which was occasioned by the transfer or discharge of an employee at the colliery, will be taken up in the customary way, through the board of conciliation.

The hearing on the protest by Isaac T. and Mary T. W. Starr against the sale of the stock of the **Lehigh & Wilkes-Barre Coal Co.** to the Jackson E. Reynolds Syndicate of New York has been postponed by the United States District Court at Philadelphia from Jan. 3 to Jan. 24. The postponement, it was reported, was made at the request of the Department of Justice.

The Burnwell Coal & Coke Co., a Johnstown corporation, has erected one of the most modern tipples for the dumping of coal and coke in the state. It is built of steel-cement and steel beams and has a capacity of 800 tons a day, with adequate room for unloading trucks, with separate exits and entrance. The tipple is situated on the Johnstown & Stoney Creek R.R., which connects with both the B. & O. and the P. R.R., thus affording every railway facility for coal shippers.

The Lilley Coal & Coke Co. held its annual meeting Saturday, Jan. 13, at the residence of Mrs. Jane Elliott, near West Brownsville. The following directors were elected: Thomas Elliott, Mrs. Jane Elliott, John H. Moffitt, Walter T. Lilley, and Charles E. Lilley of Bluefield, West Virginia. The present officers are: Thomas Elliott, president; Mrs. Jane Elliott, vice-president; John H. Moffitt, secretary and treasurer, and Guy Moffitt, solicitor. The Lilley company is one of the most active operating companies in the coal mining business in the Great Monongahela Valley.

The Philadelphia & Reading Coal & Iron Co. has just let the contract for fifteen blocks of houses, comprising accommodations for thirty families, to the Bell Lumber Co., Inc., of Minersville, and preliminary work has been started. Ten of the blocks will be built at Phoenix Park and five at Branchdale. The floor plans will be identical in each case, but variation in placing the covered porches, in some cases at the front and in others at the side, coupled with the company's established custom of painting no two adjoining blocks in the same colors, will give variety of external appearance. The houses will be frame, with asbestos shingle roofs and concrete cellars extending the whole length of the building. There will be six rooms in each house and, in conformity with the established policy of the Reading's land department, each will have at least two windows. This is the first housing contract of any magnitude in the lower anthracite field for 1923, and construction probably will be complete by early summer.

Roy V. Whitman, formerly with the Ebensburg Coal Co. at Ebensburg, Pa., is now chief engineer with the Standard Oil interests at Maracaibo, Venezuela.

W. G. Shallcross, formerly superintendent of mines with the Ford Collieries Co., Curtisville, has recently taken charge of the mines of the Fox Coal Co., Portersville.

G. M. Butterfield, identified with the Jamison Coal & Coke Co.'s Pittsburgh office for 21 years, and **B. B. Blair**, who was with the same company for 15 years, have organized a company for the purpose of dealing in coal and coke under the name of the **Western Pennsylvania Fuel Co.** Offices are located in Greensburg.

Operating officials of the H. C. Frick Coke Co. gathered at the Greensburg Country Club recently for **their annual dinner.** W. H. Clingerman, president of the coke company, acted as toastmaster. J. W. Anawalt spoke on "The Union Supply Company: Its Mission and Purpose." "The Problem of Mechanical Coal Loading" was the theme of G. E. Huttle of Scottdale. R. E. Kirk spoke on "Human Relations in Industry."

Charles Brown, 35 years old, yard boss for the Hillman Coal & Coke Co. at Luzerne plant at Maxwell, Luzerne township, was **shot twice and killed instantly** Jan. 20 by William Thompson, a negro, who had been discharged Friday by the yard boss. On Friday he had words with the negro over the way the latter was doing his work. He told the negro, it was said, that if he would not follow instructions he might consider himself discharged. The negro ignored the official and was ordered to leave the plant. When Brown was at breakfast at a boarding house the next morning, the negro entered and shot him twice. Brown leaves a wife and three children.

UTAH

The Columbia Steel Corporation, San Francisco, has placed a contract with the Koppers Co., Pittsburgh, Pa., **to install a byproduct coke plant** at Salt Lake City, in connection with a blast furnace which is to be erected there. The plant will consist of 33 ovens of the new Koppers type, having a daily carbonizing capacity of 1,000 tons of coal. The plant will run on Utah coal and this will mark the first attempt to carbonize Utah coal in a commercial way in byproduct ovens. Construction will begin immediately and it is expected the plant will be completed in about a year.

VIRGINIA

Chester B. Koontz, representative at Norfolk, for the Willard Sutherland Coal Co., has been made president of the Hampton Roads Foreign Trade Club, reorganized to include in its membership representatives of practically every shipping concern in this port.

The Southern Fuel Co., of Norfolk, has been incorporated for $50,000. T. Levy is president of the company and J. W. Powell is secretary.

WEST VIRGINIA

A. C. Westfall, of Buckhannon, has leased from Senator R. E. Talbott of Philippi, W. Va., a large coal mining property at Wilmoth, in Randolph County. The property is ready to operate, being equipped with a tipple and other mining appurtenances.

Sufficient progress has been made by the **Virginia & Pittsburgh Coal Co.** in the driving of headings at its Morgan mine No. 2 to enable this company to load a small tonnage of coal over an old tipple at the No. 2 mine. When the company is able to load coal to capacity at this mine, daily production will reach approximately 1,500 tons a day. The Morgan mine adjoins the Parker Run plant of the Fairmont & Cleveland Coal Co.

The Beveridge Co-operative Coal Co. has been organized for the purpose of operating in Upshur County, having a capitalization of $10,000. The office of the concern is to be at Buckhannon. Interested in this new enterprise are W. P. Beveridge, A. V. Rush, G. D. Toler, June Toler, Joe Barnes and Robert Cook, of Buckhannon.

M. B. Coulter, former West Virginia State Mine Inspector, is now superintendent of mines at Elm Grove, W. Va.

L. E. Frick, of Frick & Blair, Evansville (Ind.) operators, was in Cincinnati recently after a visit to the Harlan (Ky.) fields, where mining properties were gone over with a view to purchasing a going operation.

The Graham Smokeless Coal Co., at Graham, has been incorporated for $470,000 and has elected the following officers: President, W. R. Graham, of Bluefield, W. Va.; secretary, R. L. Hailey, of Bluefield, W. Va.

WASHINGTON, D. C.

By purchasing the land occupied by the fuel yards at South Capital and I Streets, from the Pennsylvania R.R., it is hoped to **reduce the cost of delivering coal** from the Government Fuel Yards to the various divisions of the District Government and government buildings 10c. a ton. A net saving of approximately $8,000 a year is expected to be realized.

CANADA

After being in effect for several days the **embargo on soft coal and coke shipments on the Pennsylvania R.R. was lifted on Jan. 24** and coal will now be accepted from mines in the area affected—the bituminous field of Pennsylvania—for shipment to Buffalo and points in Canada. The removal of the embargo will have the effect of releasing for shipment to Ontario many carloads of soft coal and coke, which will go a long way toward helping to make up for the shortage of anthracite. John Macdonald has returned to Toronto after representing the Nova Scotia coal miners at the labor congress in Russia. He declares that the German industrialists will get no military assistance from Soviet Russia in the present difficulties with France.

Sale of St. George's coal fields on the west coast of Newfoundland, is reported. It is stated that an English company is the purchaser for $1,000,000, part cash, and the balance secured by eight per cent bonds of the company.

Hon. W. E. Knowles, K. C., Moose Jaw, has accepted an invitation to become independent chairman of the committee which will have placed before it the disputes between the miners and operators in the Midwest, the Canmore, the Crow's Nest and Brazeau collieries. The other members of the committee will be Robert Young, Commissioner of the Canadian Coal Operators' Association, and Robert Livett, representative of the United Mine Workers. Sessions have been opened in Calgary.

William Ryan, district president of the United Mine Workers of America, **was found guilty Jan. 24 of assault**, and remanded for sentence until this week. Crown witnesses testified that on Dec. 2 Ryan, in company with pickets, tried to restrain Boss Carpenter Klinch, at the Black Diamond mine, from going to work.

No. 5 Mine, Cumberland, Canadian Collieries (D) Ltd., has been closed down. Temporarily there will be no production from these workings, although the mine plant and equipment will be kept in condition for the resumption of operations when conditions warrant it.

It is reported that all the coal properties and claims controlled by the late Lord Rhondda in central British Columbia have passed into the hands of British interests organized for colonization work and for the development of natural resources in western Canada. Some of these properties are situated north of the town of Terrace on the Grand Trunk Pacific Railway, about 90 miles east of the seaport of Prince Rupert. A market for the coal, which it is proposed developing, may be obtained at Prince Rupert and it also is expected that an export trade to South America may be anticipated.

DECEMBER OUTPUT OF COAL IN BRITISH COLUMBIA

Mine	Tons
Vancouver Island District	
Western Fuel Corporation of Canada, Ltd., Nanaimo	69,420
Canadian Collieries (D) Ltd., Comox	31,671
Canadian Collieries (D) Ltd., Extension	19,120
Canadian Collieries (D) Ltd., South Wellington	10,040
Granby Consolidated M. S. & P. Co., Cassidy	21,514
Nanoose Wellington Collieries, Wellington	10,270
Old Wellington, Nanaimo	929
Total	162,964
Nicola-Princeton District	
Middlesboro Collieries, Middlesboro	8,548
Fleming Coal Co., Merritt	2,407
Coalmont Collieries, Coalmont	10,042
Princeton Coal & Land Co., Princeton	2,132
Total	23,129
Crow's Nest Pass District	
Crow's Nest Pass Coal Co., Coal Creek	38,399
Crow's Nest Pass Coal Co., Michel	33,571
Corbin Coal & Coke Co., Corbin	8,457
Total	80,427
Total December	267,520

Obituary

James C. Patterson, for the last thirty-five years a leading figure in the coal-mining industry in the Birmingham (Ala.) district, died Jan. 19 at his residence in Birmingham after a short illness, aged 75 years. Coming to this country from Scotland and first settling in Pennsylvania, later moving to Ohio, and coming to Birmingham district in 1885, he obtained employment with the Tennessee Coal, Iron & Railroad Co. as a miner. He forged to the front rapidly and held various official positions as a mining executive, and for a number of years was the executive head and principal owner of the Jagger Coal Co., New Found Coal Co. and West Helena Coal Co., and also held extensive interests in the Pratt Consolidated Coal Co., of which he was a director. Mr. Patterson was widely known and held in high esteem among his friends and acquaintances.

H. A. Paynter, coal operator, 40 years old, died at Winchester, Ky., Jan. 12, following a short illness. He was president of the firm of H. A. Paynter & Co. and had been prominent in the coal fields of eastern Kentucky for several years. He was a native of Carter County. His widow and two children survive.

George H. Hulett, of Cleveland, noted in the engineering field as a designer of heavy equipment for handling coal and ore, died at Daytona, Fla., Jan. 17, at the age of 76 years. Mr. Hulett was born in Conneaut, Ohio. In 1890 he became engaged in the manufacture of coal and ore handling machinery in Cleveland. In 1898 he became associated with the Variety Iron Works, Cleveland, as engineer of construction, and in 1903 he became an engineer of the present McMylern Interstate Co. and developed the Hulett unloading machine while with this company. In 1907 he became connected with the Webster, Camp & Lane Co., Akron, which soon afterward was consolidated with the Wellman-Seaver-Morgan Co., Cleveland. He was vice-president and director of this company, with which he remained until 1918. Then he became associated with his son, Frank E. Hulett, who organized the Hulett Engineering Co., and was its vice-president. He was a member of the American Society of Mechanical Engineers and of the Cleveland Engineering Co.

J. M. Kennedy, a pioneer mine operator, died at his home at Minto, N. B., on Jan. 17. He managed and controlled the Northfield Coal Co. until it was disposed of several years ago to the International Paper Co., and since then he had managed the Minto Hotel and had been engaged in other business enterprises, being exceptionally active, although 77 years old.

Cornelius Schrepferman, a well-known coal operator of Brazil, Ind., died in an Indianapolis hospital recently of paralysis. He was thirty-six years old. He had been connected with the Brazil block coal field business since a youth, having formerly been in business with his father, Nicholas. Mr. Schrepferman was in charge of mine operations while his brother had charge of the Indianapolis selling office. He is survived by the widow and a son and daughter.

Herbert Henry Ashley, 80 years old, former president of the Parrish Coal Co., died at his home in Wilkes-Barre, Pa., on Jan. 20. For forty years he was engaged in the anthracite mining industry and was a member of the old firm of Parrish, Phillip & Co., of New York City. Mr. Ashley was an old resident of Plymouth, removing to Wilkes-Barre in later years. At the time of his death he was vice-president and a director of the First National Bank of Wilkes-Barre, president of the Hazard Manufacturing Co. and was associated with the Vulcan Iron Works.

Francis Marion Dugger, 81, a capitalist and one of the pioneers in the Indiana coal-production industry, died recently at his home in Bloomfield, Ind. Mr. Dugger was a veteran of the Civil war. He was elected sheriff of Greene County, Ind., in 1866 and was re-elected three times. He was a pioneer in the development of the coal fields of Sullivan and Greene counties. As early as 1882 he became interested in coal fields and one of his first shafts was sunk near the present town of Dugger, which was named in his honor. He also sunk shafts near Linton, Midland and Jasonville, all in Indiana. For many years he was president of the Citizens State bank of Bloomfield, also of the Bloomfield Trust Co.

Traffic News

Supplement No. 23 to summary of informal embargo notices No. 3, issued Jan. 25, by the New York Central R.R. is as follows: Account embargoes placed by other lines **embargo 138 is placed by the Boston & Main R.R.** on all freight from the Boston & Albany R.R. at all junctions for movement to or via the Boston & Maine R.R., except freight which originates at stations on the Boston & Albany R.R.

Embargo 116, placed Jan 19 by the Philadelphia & Reading Ry. on bituminous coal destined to Port Richmond piers, Port Richmond, Philadelphia, Pa., **is extended** to cover all shipments consigned to Coale Corporation, Emmons Coal Co. and Willard Sutherland. **Embargo is modified** to permit shipments consigned to C. J. Mittenberg to come forward.

Embargo 76, placed Jan. 13 by the Philadelphia & Reading Ry. covering bituminous coal to Port Reading piers, Port Reading, N. J., is **modified** to permit shipments to come forward consigned to Whitely & Foedisch and Empire Coal Mining Co.

In a tentative report in the case of the Indiana Power Co. vs. the Pittsburgh, Cincinnati, Chicago & St. Louis Ry. Co., Interstate Commerce Commission Examiner Paul O. Carter finds that the rate of **70c. per net ton** charged for the transportation of bituminous coal from the carriers' team tracks at Edwardsport, Ind., to the complainant's plant was **unreasonable.** Reparation is recommended.

The American Railway Association has appointed **S. H. Charles as district manager of a newly created car-distribution district** composed of Alabama, Tennessee, Mississippi, Georgia, Florida, North and South Carolina and the New Orleans terminals, with headquarters in Birmingham, and coal operators and shippers generally expect a more equitable distribution of cars in the future and more prompt attention to complaints on transportation matters.

The I. C. C. has dismissed the complaint of the City of Detroit against the Chesapeake & Ohio Ry. Co. et al. in which it was alleged that the charges collected by the defendants on approximately 12,000 tons of bituminous coal shipped in carloads between May 3 and Aug. 1, 1921, from Holden and other points in the Kanawha district in West Virginia via the Chesapeake & Ohio, Chesapeake & Ohio Northern, and Hocking Valley to the dock at Toledo, Ohio, for transshipment across lake, were unreasonable, unjustly discriminatory and unduly prejudicial.

The Coal, Coke and Iron Ore Committee, Central Freight Association Territory, announces a public hearing 10 A.M., Feb. 8, instead of Feb. 1, as previously announced, to **consider cancellation of rates** on coke, coke ashes, coke breeze and coke dust, carloads, to Moline, Rock Island, Ill.; Davenport, Ia., and Omaha, Neb., in connection with C. B. & Q., C. M. & St. P. and C. R. I. & P. railways from origin stations in the Clairton, Connellsville and Gallitzin districts, as set out in P. R.R. Tariff AA I. C. C. 1843.

The Corona Coal Co., of Birmingham, Ala., is seeking to recover reparation from the St. Louis-San Francisco Ry. for the rates charged from Sept. 1, 1920, to Dec. 29, 1921, on all coal which moved from its mines to Pensacola, Fla., for bunker purposes. In addition, the Corona company had under contract the bunker coal output of the Empire Coal Co. The Corona company contends that the rate charged was unreasonable to the extent that it exceeded $2 per ton.

G. H. Sewards, of the West Kentucky Coal Bureau, Louisville, is back from Atlanta, Ga., where he attended a hearing before the Southern Freight Rate Committee regarding rates to the Southwest. It is proposed that rates from west Kentucky to southern Louisiana, now 25c. per ton over rates from Alabama, be placed on the same basis as rates from Alabama.

The Coal, Coke and Iron Ore Committee, Central Freight Association territory, will hold a public hearing Feb. 8, at 10 A.M., **to consider rates on bituminous coal,** carloads, to stations on Chicago & Erie R.R., Uniondale, Ind., to Huntington, Ind., inclusive, and to stations on Wabash Ry., La-Gro, Ind., to Huntington, Ind., inclusive, from mines in Inner Crescent, $2.96 per net ton with usual differential to apply from Mines in the Outer Crescent. The hearing will be held at room 606, Chamber of Commerce Building, Pittsburgh, Pa.

The I. C. C. has dismissed complaint in Docket No. 11777, Lehigh Silk Dyeing Co. vs. the Director General of Railroads, as agent, and the Lehigh Valley Railroad Co., having found that the charges assailed were not unreasonable, or otherwise unlawful, except to the extent that they exceeded those which would have accrued if complainant's shipments had been actually placed in the order of their arrival. Complaint alleged that the demurrage charges collected at Allentown, Pa., in August, 1918, on certain interstate shipments of bituminous coal were unreasonable, unjustly discriminatory and unduly prejudicial, and asked for reparation.

Examiner Mackley, for the I. C. C., has made a tentative report in Docket 13594, Megeath Coal Co, vs. The Director General of Railroads, in which he recommends that "the **rates on coal from Winton, Wyo., to destinations in Washington, Oregon and other Western states, be found unreasonable** to the extent that they exceeded the rates in effect at the time shipments moved from the Rock Springs-Kemmerer group in which Winton was subsequently included." The shipments moved between Jan. 7, 1919, and March 19, 1919.

The I. C. C. has dismissed complaint in Docket 13040, Hazel Atlas Glass Co. vs. the Director General of Railroads as agent of the Pennsylvania R.R., having found the rates assailed by complainant to be applicable. Complainant alleges that the Washington, Pa., rate of 45c. charged on 180 carloads of coal shipped between Jan. 1 and June 24, 1918, from Meadow Lands, Pa., to its plant No. 2, on the Tylerdale Connecting Railway in Canton Township, Pa., was inapplicable and unreasonable.

In Docket No. 12412—Texas Steel Co., R. S. Collins and W. H. Lantz, Receivers, vs. Director General of Railroads as agent, Chicago, Rock Island & Pacific Railway Co., et al.—**the I. C. C. finds that rates on coke, in carloads, shipped from Potter, Okla., to Rusk, Texas, during federal control, were unreasonable,** and awards reparation to complainant. The Texas Steel Co. alleged that the rates charged on 121 carloads of coke shipped between Jan. 14 and May 23, 1919, inclusive, from Howe-Potter, Okla., to Rusk, Texas, were unreasonable and in violation of Sec. 4 of the Interstate Commerce Act.

Association Activities

West Kentucky Coal Operators' Association

C. F. Richardson, of Sturgis, representing the West Kentucky Coal Co., has been named president of the West Kentucky Coal Operators' Association for the coming year. Other officers named are: J. D. Overall, Madisonville, of the Reinecke Coal Mining Co., vice-president, and C. E. Reed, secretary. The executive committee includes the following new members: F. P. Wright, Bevier, of the Crescent Coal Co.; H. L. Tucker, Central City, of the Rockport Coal Co.; A. W. Duncan, Greenville, of the W. G. Duncan Coal Co.; M. B. Lanier, Nortonville, of the Norton Coal Mining Co.; P. D. Berry, Providence, of the Providence Coal Mining Co.; Brent Hart, Morton's Gap, of the Hart Coal Co., and F. D. Rash, Earlington, of the St. Bernard Mining Co. An organization has been formed for handling transportation matters and seeking better freight rates. As usual, some of the newspapers came out with stories of the last meeting and argued around prices as the basis of the meeting. One paper later retracted its story on price discussion, which is not within the province of the organization. J. Van Norman, attorney for the organization, talked on traffic matters and cases handled before the Interstate Commerce Commission, and C. E. Reed made an interesting report of the year's work.

Hazard Coal Operators' Exchange

J. E. Johnson, Lexington, Ky., was elected president of the Hazard Coal Operators' Exchange at the annual meeting Jan. 13 in Lexington. J. T. Hatfield, Cincinnati, was chosen vice-president, and H. E. Bullock, treasurer. The secretary's office is appointive, by the executive committee. The executive committee elected was: Carol Robinson, Lexington; William J. Brown, Jr., Lexington; S R. Johnson, Johnson City, Tenn.; J. H. Bowling, Lexington; Henry Pfenning, Lexington; James Bonneyman, Cincinnati; H. K. English, Lexington; Prentice Burlingham, Cincinnati; W. E. Davis, Lexington; George W. Hay, Jenkins; W. S. Dudley, Lexington; H. H. Heimer, Columbus; A. L. Allais, Chicago, and G. P. Fitz, Hazard. A banquet was held at the Phoenix Hotel, with over 300 covers laid. W. O. Davis was toastmaster, and talks were heard from the Governor, leading coal operators and some of the big men of eastern Kentucky.

Cincinnati Coal Exchange

—The tenth annual banquet of the Cincinnati Coal Exchange was held Jan. 23 at the room of the Automobile Club and was attended by 125, the largest in its history. George Cushing, of Washington, in a characteristic talk advised resistance to the demands of the Fact Finding Commission for business information that would lead into the private affairs of the selling companies. J. D. A. Morrow, now a member of the Cincinnati trade, made a happy little talk on the coal trade as seen from the viewpoint of the upbuilding of man from the monkey stage of three million years ago. He said that probably this was the cause of too much "monkey government" in Washington. Charles Dering, of Chicago, and Joe Tuohy, were among others who featured the program.

Tug River Coal Operators 'Association

At the annual meeting of the Tug River Coal Operators' Association, held in Bluefield on Jan. 4, the following officers were elected: L. Epperly, of Bluefield, president; A. F. Leckie, of Welch, vice-president; C. C. Morfit, of Welch, secretary; J. T. Wilson of Bluefield, treasurer. The new president of the association is general manager of the Collins interests in West Virginia, having his headquarters at Bluefield. At its annual meeting the association indulged in a thorough discussion of conditions now affecting the industry, the transportation situation coming in for a lion's share of the discussion, as the full operation of mines in the Tug River field has been interfered with to a great extent by the inability to obtain cars.

Northeast Kentucky Coal Association

Levity and entertainment and the Chamber of Commerce smoker closed the meeting of the Northeast Kentucky Coal Association Jan. 25 at Ashland, Ky. Officers elected are C. W. Conners, Esco, president; E. R. Price, Vanlear, vice president; E. L. Bailey, Lookout, second vice president; George B. Archer, Prestonsburg, treasurer; Henry Laviers, Paintsville, T. S. Haymond, Wayland, and G. W. Hay, Jenkins, executive committee; C. J. Neekamp, secretary.

Coming Meetings

Northern West Virginia Coal Operators' Association will meet Feb. 13 at Fairmont, W. Va. Secretary, G. S. Brackett, Fairmont, W. Va.

American Institute of Mining and Metallurgical Engineers will hold its annual meeting Feb. 19-22, 1923, at the Engineering Societies Building, New York City. Secretary, F. F. Sharpless, New York City.

International Chamber of Commerce will hold its second general meeting in Rome, Italy, March 19-26.

American Society for Testing Materials will hold its annual meeting at the Chalfonte-Haddon Hall Hotel, Atlantic City, N. J., beginning June 25 and continuing throughout the week. Secretary, E. Marburg, Philadelphia, Pa.

The Colorado & New Mexico Coal Operators' Association will hold its annual meeting June 20 at Denver, Col. Secretary, F. O. Sandstrom, Denver, Col.

National Foreign Trade Council will hold its annual conference April 25-27 at New Orleans, La.

Pittsburgh Vein Operators' Association will hold its annual meeting Feb. 12 at the Hotel Cleveland, Cleveland, Ohio. Secretary, D. F. Hurd, Cleveland, Ohio.

The Upper Potomac Coal Association will hold its annual meeting Feb. 10 at Cumberland, Md. Secretary, J. F. Palmer, Cumberland, Md.

Northwestern Pennsylvania Coal Operators' Association will hold its annual meeting March 6 at the William Penn Hotel, Pittsburgh, Pa. Secretary, T. F. Diefenderfer, Butler, Pa.

Canadian Institute of Mining and Metallurgy's annual meeting will be held March 7, 8 and 9 at the Mount Royal Hotel, Montreal, Quebec, Canada. Secretary, George C. Mackenzie, Montreal, Quebec, Canada.